

BUILDING TYPES

STUDY NO. 193:

PUBLIC LIBRARIES

DECEMBER 1952

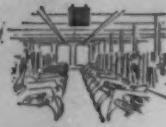
ARCHITECTURAL RECORD

Le Bonheur Children's Hospital, Memphis, Tenn.; J. Frazer Smith & Associates, Architects & Engineers



FOR CLASSY SHOPS

. . . OR BUSY PLANTS



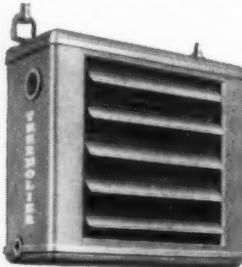
THERMOLIER UNIT HEATERS

The condensed table below is a quick guide to the selection of the correct Thermolier for specific conditions. The capacities, when motors are operating at normal speeds, are based on Standard Basis of Rating: 2 lb. steam pressure and 60° F entering air temperature.

Grinnell Thermoliens are tested and they are rated in strict accordance with rules of the Industrial Unit Heaters Association.

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horizontal delivery

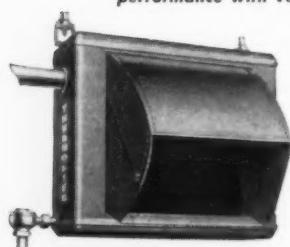


textile (horizontal delivery)



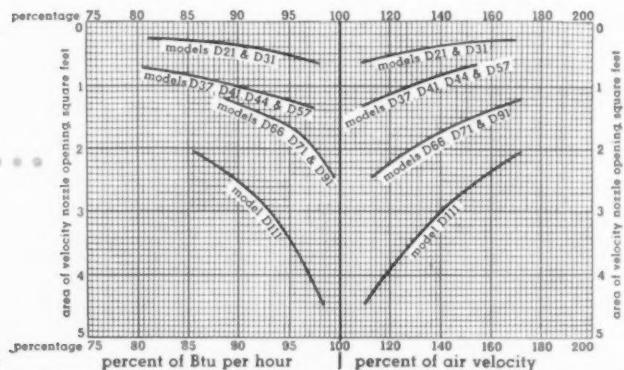
vertical delivery

performance with velocity nozzle ►



velocity nozzle (horizontal delivery)

model	total heat delivered, Btu per hr	sq ft edr (nominal)	air velocity at exit, louvers open, lin. ft. per min.
horizontal delivery			
D21	35,600	148	786
D31	48,700	203	851
D37	62,200	259	753
D41	71,000	295	901
D44	84,100	350	887
D57	101,300	422	1016
D66	128,700	536	779
D71	151,700	632	977
D91	196,000	817	985
D111	275,300	1147	1048
Textile			
TX70	69,800	291	826
TX110	113,700	474	877
vertical delivery			
VA1042	50,800	212	1399
VA1045	73,600	307	1287
VA1065	109,400	456	1354
VA1075	145,600	607	1231
VA1101	185,000	770	1495
VA1111	257,000	1071	1631



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THE RECORD REPORTS

Paris Bars a Skyscraper For U.N. to Preserve View

By The United Press

PARIS, Nov. 1—City authorities turned down today plans for a seventeen-story, sandwich-shaped United Nations "skyscraper" in Paris because it would interfere with the view of the Arc de Triomphe.

The Paris Building Committee said, furthermore, that the proposed \$7,500,000 headquarters of the United Nations Educational, Scientific and Cultural Organization looked "like a Notre Dame built of radiators." It told UNESCO to come back again sometime—if it was ready with plans for a "more esthetic" building or was prepared to put its proposed headquarters in a less conspicuous spot.

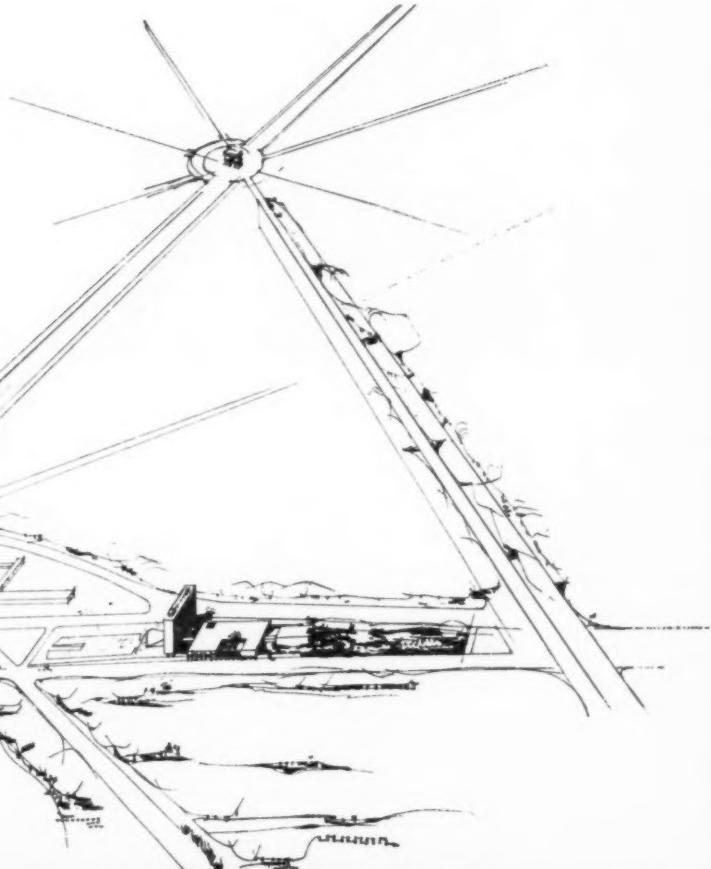
The committee took the occasion to comment on the United Nations headquarters building in New York. One committee member said the New York structure was "claimed as the symbol of the universal spirit incarnated by the United Nations, whereas in reality it expresses only a bureaucratic megalomania allied to a disappointing platitude of conception."

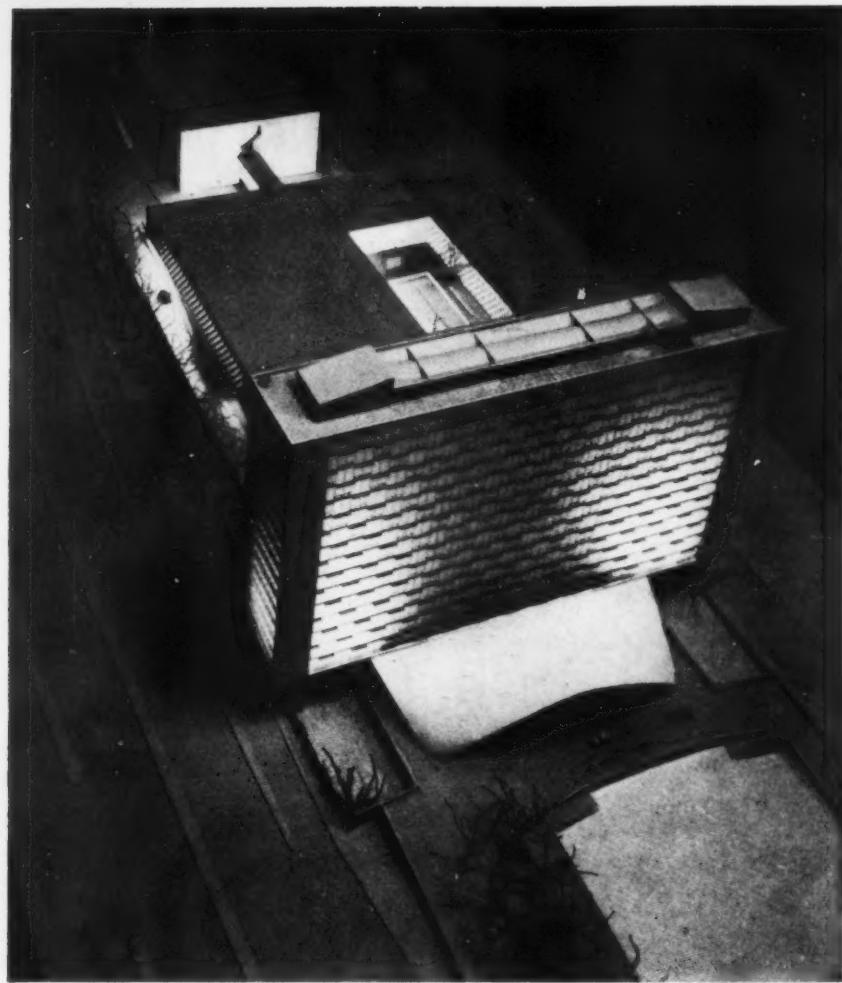
THE BUILDING PARIS DOESN'T WANT: PROPOSED HEADQUARTERS FOR UNESCO

Marcel Breuer (United States), Architect

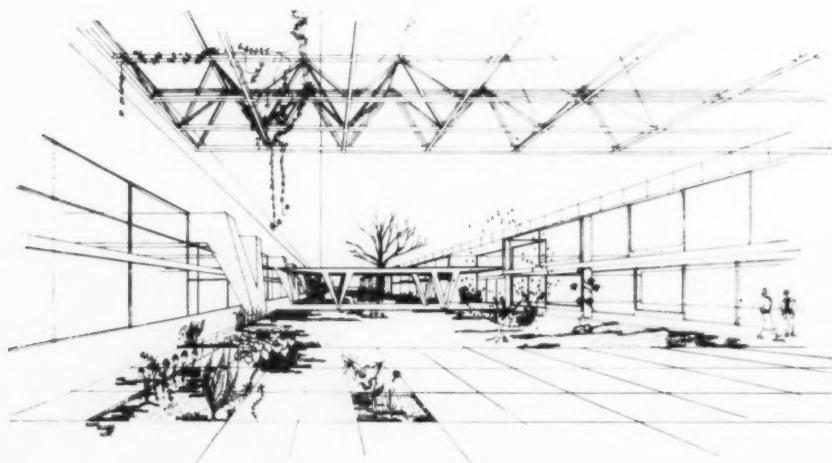
Bernard Zehrfuss (France), Architect

Pier Luigi Nervi (Italy), Engineer

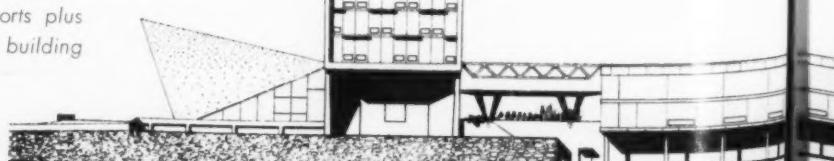
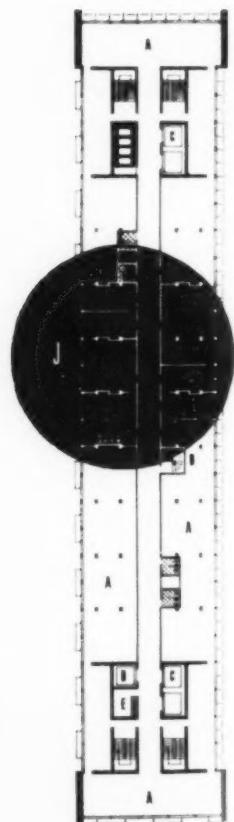
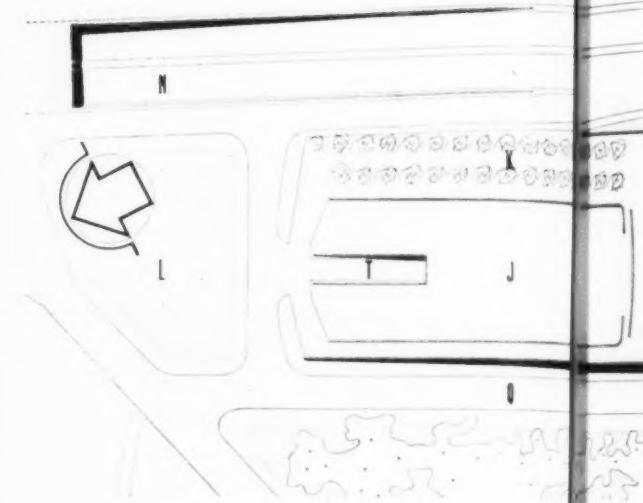


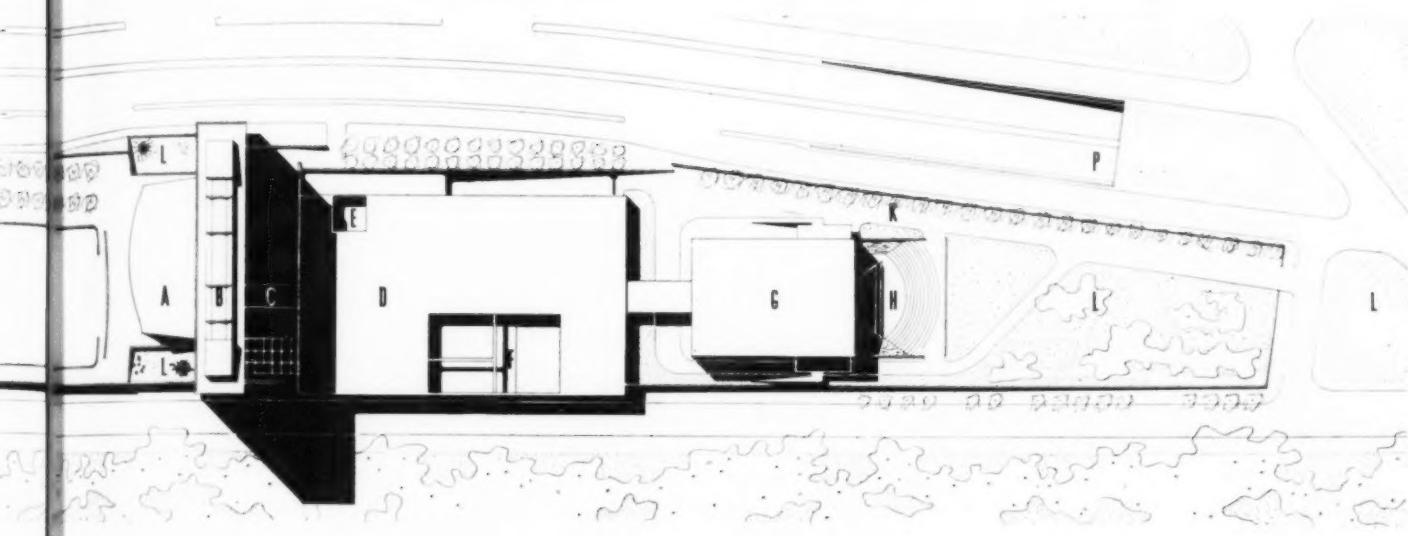


Three buildings (seen here in lighted model) make the scheme: 16-story office building, central conference building and auditorium (with amphitheater) for general conference plenary sessions. The reinforced concrete shell which covers the main lobby is supported on the north by a parabolic arch, on the south by main slab of floor above



The central patio (C in site plan across-page top) links office and conference buildings. For maximum ground floor openness, V-shaped supports plus two stair and lift enclosures carry office building





SITE PLAN

- A. Main Lobby
- B. Office Building
- C. Central Patio
- D. Central Building
- E. Small Patio
- F. Delegates' Patio
- G. Plenary Hall
- H. Open Air Theater
- J. Piazza
- K. Parking, 106 cars—outside only
- L. Gardens
- N. Thierry de Martel Underpass
- O. Porte Dauphine
- P. Admiral Brux Underpass
- Q. Avenue de la Division Leclerc
- T. Vehicles

THE OLD WORLD appears to have rejected the new; and as this is written, the future of the Breuer-Zehrfuss-Nervi plans for UNESCO's permanent headquarters in Paris is as shrouded in uncertainty as the future of the United Nations Educational, Social and Cultural Organization itself. The scheme would be presented to the UNESCO General Conference which opened in Paris November 12; only that much was certain.

The place of the UNESCO building in "the great composition of Paris" was very much in the minds of the designers. In their report to UNESCO, they pointed out that despite its proposed height, the 16-story building would be lower than the principal monuments along the great transverse axis of Paris: Louvre-Tuileries-Place de la Concorde-Champs Élysées-Etoile-Porte Maillot-Porte de Neuilly-Rond Point de la Défense. They noted specifically that it would be 35 ft lower than the Arc de Triomphe at the Etoile.

The building was planned to be parallel to the "Grand Axe" so the view from neighboring buildings of the Bois de Boulogne would not be obstructed. The distance between the proposed building and the nearest buildings would be

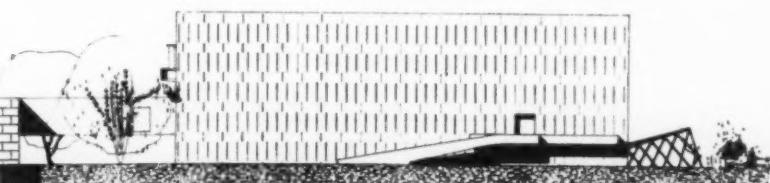
about 270 ft, as contrasted with its height of 200 ft.

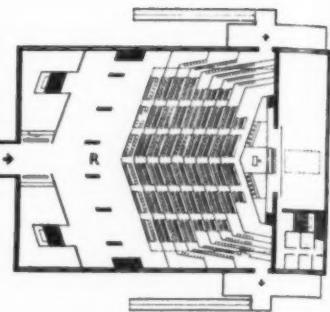
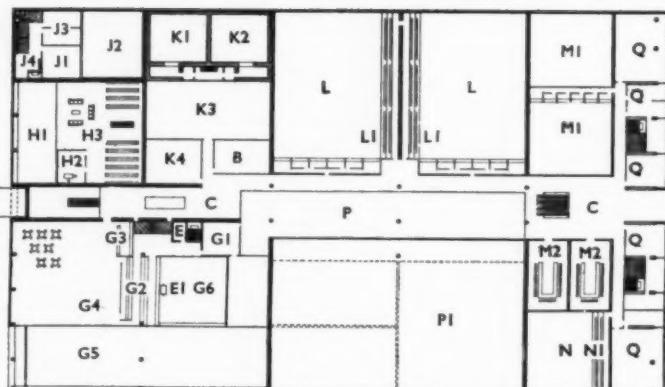
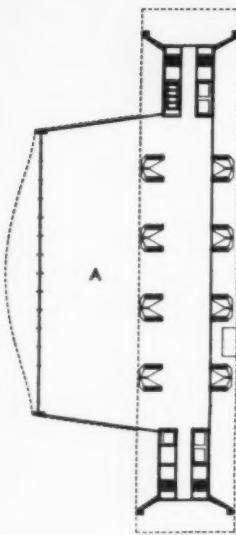
Before the Paris interdict fell, the plans had the enthusiastic approval of the international panel of architects appointed by UNESCO as an advisory group — Lucio Costa (Brazil), Le Corbusier (France), Walter Gropius (United States), Sven Markelius (Sweden) and Ernesto Rogers (Italy).

"The plans as submitted reveal an understanding of the obligations of architecture," they said in their report, "and are not only practical but inspired and capable of attaining UNESCO's aim in the building of its headquarters, which is destined to become a symbol of world significance."

Ironically enough, the present site at Avenue Foch and the Bois de Boulogne was offered by the French government to help UNESCO out of an earlier embarrassment over headquarters plans. UNESCO had commissioned French Architect Eugène Beaudouin to design a headquarters building and then rejected his plans, the French tactfully suggested that perhaps the Place de Fontenoy site (in a Beaux-Arts neighborhood) was "unsuitable," and offered the new site on the main axis of Paris.

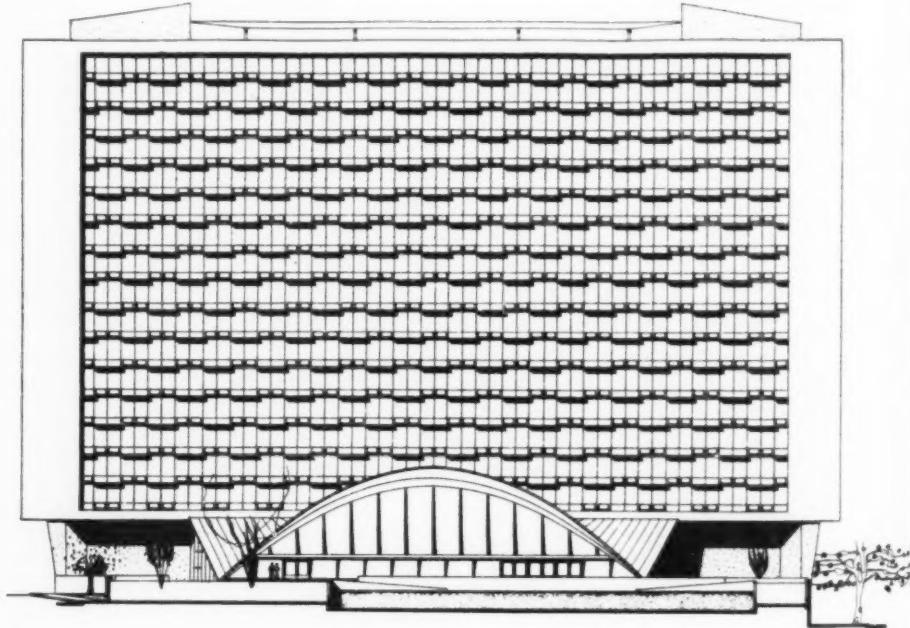
Below and across-page: west elevation; across-page, plan of typical floor of office building (16th): A. Office space to be partitioned; B. Stair reserved for firemen; C. Elevators; D. Freight elevator; E. Mechanical substation; J. Typical furnishing



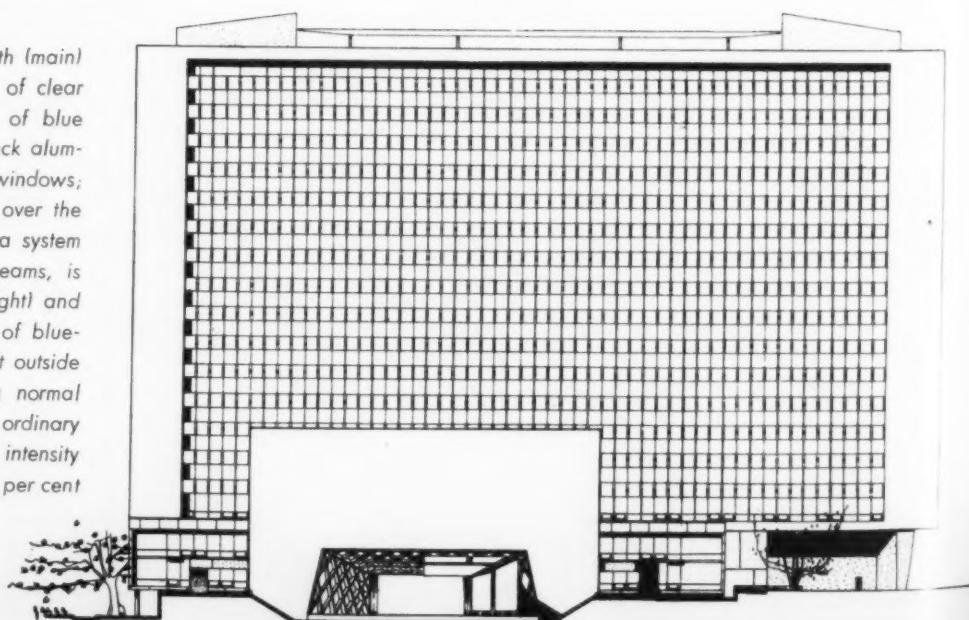


FIRST FLOOR PLAN

- A. Void of Main Lobby
- B. Air Conditioning
- C. Public Gallery
- D. Covered Passage
- E. Freight Elevator
- G. Restaurants
 - 1—Kitchen offices; 2—Serving Counter; 3—Cloakroom; 4—Cafeteria; 5—Void of Restaurant; 6—Void of Kitchen
- H. Library
 - 1—Void of Reading Room; 2—Office; 3—Stocks
- J. Nursery School
 - 1—Classroom; 2—Small Patio; 3—Office; 4—Storage
- K. Department of Mass Communications
 - 1—Void of Dramatic Studio; 2—Void of Television Studio; 3—Press, Reception and Information; 4—Unallocated
- L. Void of Commission Room
 - 1—Public and Press
- M. Committee Rooms
 - 1—Void of Large Rooms; 2—Small Rooms
- N. Void of Executive Board Meeting Hall
 - 1—Public and Press
- P. Void of Delegates Lounge
 - 1—Delegates Patio
- Q. Conference Secretariat
- R. Plenary Hall



Elevation at right, above, north (main) façade: walls and windows of clear plate glass with projections of blue Ardoise stone above and black aluminum railings below sliding windows; sash is aluminum. The shell over the main lobby, reinforced with a system of geometrically arranged beams, is 175 ft wide. South façade (right) and east facade have sun filters of blue-green solar glass placed 4 ft outside the window walls, allowing normal daylight and view through the ordinary window glass while reducing intensity of solar radiation by about 65 per cent



ECONOMY TO EXPAND UNDER NEW NATIONAL MANAGEMENT

Construction in the Transition Year 1953

*By Thomas S. Holden, President,
and Clyde Shute, Assistant Vice President
and Manager of Statistical and Research Division*

F. W. DODGE CORPORATION

ARCHITECTURAL RECORD

DECEMBER 1952

ECONOMY TO EXPAND UNDER NEW NATIONAL MANAGEMENT

*By Thomas S. Holden, President, and Clyde Shute, Assistant Vice President and Manager
of Statistical and Research Division*

ECONOMIC changes to stem from the sweeping political decision of November 4 are apt to come about gradually. A good part of the coming year will be taken up in organizing the nation's new management team and in laying the groundwork for legislation to effect such changes as may be, with due deliberation, determined upon.

Responding before Election Day to a survey questionnaire sent out by F. W. Dodge Corporation, a number of leading economists volunteered the opinion that election results would have little effect on specific economic trends during the calendar year 1953, but might affect very considerably the trends thereafter. In that view the present writers concur; in construction as in other sectors of business, we see in prospect only minor changes from the 1952 pattern of activity.

A NEW ORIENTATION

It is necessary to see in the current political upheaval much more than a change of management and a desire to see new faces in Washington. It really signifies that the American people have adopted a new orientation toward the future. In this respect political action has lagged behind the people's decisions as to how they will plan their private lives; their intellects have lagged behind their intuitions.

Millions of young American men and women have recently decided that raising families of two, three, four or even more children is a swell idea. As a mass vote of confidence in the future, this surpasses anything else that has happened in modern times. Its resultant upping of the rate of population growth in the United States furnishes a complete confutation of the theory of the mature economy which was the cornerstone of the New Deal economics and the New Deal philosophy.

Upon the theory of the mature (or static) economy were based the related ideas of oversaving and underconsumption as causes of depression, of continuous inflation as a guarantee of full employment, of federal spending and federal subsidies as cure-alls for every sort of economic maladjustment. It seemed to some that perpetual motion in economics had been discovered; to others, it was apparent that prosperity based on excessive taxing

and government spending really rests upon dissipating in advance the capital of the coming generation.

The millions of young Americans who have adopted the policy of large families are also going strong for home ownership, for good schools and for a generally improving standard for their children. It must become evident to increasing numbers of them that the best known assurance of a rising standard of living for increasing numbers of people is a dynamic capitalism based on free enterprise. The election result may properly be interpreted as a rejection of the Marxist and pseudo-Marxist theories which played so large a part in the thinking of many government administrators and political theorists during the past 20 years. The new administration will tend to rely more upon incentives to private investment and less upon government stimulation in encouraging economic expansion than a continuing New Deal administration would be likely to do.

That economic expansion is the basic factor in new construction demand and also the central feature of a dynamic national economy cannot be emphasized too strongly or reiterated too frequently.

EVERY THIRTEEN SECONDS

A giant cash register in the lobby of the U. S. Department of Commerce Building in Washington ticks off for the Census Bureau the current population of the United States. It currently registers one new person, net, every 13 seconds. That means that potential new customers are being added to the market for goods and services in the United States at a rate of more than 2,400,000 annually.

If we were living in a region of definitely limited resources and limited productivity this might mean disaster, or at least a steady lowering of living standards, since a limited volume of goods and services would have to be divided among more and more people. Of course, the opposite of this is true. Americans are not only consuming goods and services at a higher rate than ever before but are at the same time supporting a high level of capital investment and military expenditures at a record

TABLE 1: ESTIMATED PHYSICAL VOLUME OF BUILDING

(in accordance with contract records for 37 eastern states; figures in millions of sq ft)

BUILDING CLASSIFICATION	YEAR 1952 ESTIMATE *	YEAR 1953 ESTIMATE	PERCENTAGE CHANGE
Commercial.....	75	95	+27
Manufacturing.....	100	80	-20
Educational and Science.....	99	105	+ 6
Hospitals and Institutional.....	25	30	+20
Public.....	13	14	+ 8
Religious.....	20	15	-25
Social and Recreational.....	12	18	+50
Miscellaneous Nonresidential.....	56	55	- 2
Total Nonresidential.....	400	412	+ 3
Residential.....	707	626	-11
Total Building.....	1107	1038	- 6

**TABLE 2: ESTIMATED NUMBERS OF NEW DWELLING
UNIT STARTS**

(in thousands)

	YEAR 1952 ESTIMATE *	YEAR 1953 ESTIMATE	PERCENTAGE CHANGE
Dodge coverage basis.....	584	512	-12
BLS overall basis.....	1090	959	-12

**TABLE 3: ESTIMATED DOLLAR VOLUMES
OF BUILDING AND ENGINEERING PROJECTS**

(in accordance with contract records for 37 eastern states; figures in millions of dollars)

CLASSIFICATION	YEAR 1952 ESTIMATE *	YEAR 1953 ESTIMATE	PERCENTAGE CHANGE
TOTAL			
(PRIVATE AND PUBLIC OWNERSHIP)			
Nonresidential.....	6216	6700	+ 8
Residential.....	6509	5770	-11
Total Building.....	12,725	12,470	- 2
Public Works and Utilities.....	3283	3550	+ 8
Total Construction.....	16,008	16,020	0
PRIVATE OWNERSHIP			
Nonresidential.....	3234	3235	0
Residential.....	5768	5110	-11
Total Building.....	9002	8345	- 7
Public Works and Utilities.....	558	585	+ 5
Total Construction.....	9560	8930	- 7
PUBLIC OWNERSHIP			
Nonresidential.....	2982	3465	+16
Residential.....	741	660	-11
Total Building.....	3723	4125	+11
Public Works and Utilities.....	2725	2965	+ 9
Total Construction.....	6448	7090	+10

* Nine months actual, last three months estimated

rate for what is technically called peacetime; we are producing not merely guns and butter, but guns and more butter.

Far from being a tax upon our economy, our new population is a stimulant. For example, in the year 1951 American families bought an estimated \$5 billion worth of merchandise that was specially designed and produced for infants and small children; babies are customers. In addition to the new homes and new schools our people are constantly demanding, there will also be added production facilities required to provide a continually rising standard of living for an increasing number of people. With increased production facilities, there will be required added facilities for transportation and distribution of goods and also for the religious, cultural and social amenities of life.

TRANSITION YEAR

The American economy is currently operating very close to capacity; it is a going enterprise that is being taken over by the new national management. To induce in 1953 industrial and construction activity measurably greater than the volume currently prevailing would require some fresh impetus of compelling power, such an impetus as is not in sight at this time.

The quite obvious fact is that the nation is beset with problems of world leadership, cold war, large-scale rearmament, federal deficits, excessive taxes and inflation. It is only reasonable to expect that the new national administration will require some time to develop top-management policies and programs for dealing with these pressing major problems and that some measure of order and control in these areas must be established before a new expansion movement is likely to take place in our domestic economy. It is significant that the incoming administration is committed to the proposition that our world position is to be enhanced by strengthening our domestic economy. In a very real and compelling sense, the coming year will be a transition year.

Such would appear to be the composite opinion of the 137 leading economists who participated in the opinion survey conducted by F. W. Dodge Corporation in October 1952. Consensus of these opinions indicated a very narrow range of trend changes in business and construction volume, prices and wages, and personal consumption expenditures. There was an indicated possibility of very mild recessions in industrial and construction activity in the second half of 1953.

MILD RECESSION?

A small minority of economists who participated in the survey indicated an expectation of a rather considerable setback in the latter part of 1953. They seem to share a fear that was rather widely expressed around the middle of 1952, but which appears to have later subsided to a degree.

The most frequently cited reason for expecting a considerable decline in business volume is the anticipated tapering off of defense expenditures. It is easy to overestimate such a possibility. There is a question whether such cuts in defense spending as can be reasonably anticipated would be of sufficient magnitude to upset the economy.

Estimates for the country's economic operations during the third quarter of 1952, as reported by the Council of Economic Advisers to the President, included the following figures, expressed as annual rates: national security, \$50 billion; all other government expenditures (federal, state and local), \$28 billion; personal consumption expenditures, \$216 billion; gross private domestic investment, \$50 billion. The total of these items is \$344 billion, this being the gross national product, or total of goods and services produced. It is to be noted that total expenditures for national security amounted to less than 15 per cent of gross national product. Furthermore, security expenditures include expenditures for military services, international security and foreign relations, atomic energy, merchant marine, promotion of defense production and economic stabilization and civil defense. Reduction of national security expenditures by a full third would of itself reduce the gross national product by less than five per cent. If such reduction can be effected, it will probably come about gradually rather than suddenly.

To believe that the highly adaptable American industry which reconverted from all-out war production to peace with minimum dislocation in 1946 cannot now adjust itself with ease to any reduction of government spending which is likely to take place seems highly unrealistic. Defense spending is important to some industries and a number of companies, but it is unrealistic to consider defense spending as a main support of the present business structure. It is absurd to believe that the nation cannot afford economy in government. It is also true that the private productive economy of the country is operating quite soundly for the most part.

Other possible causes of business recession that

have been cited are: expected declines in expenditures for new plant and equipment; repercussions of current declines in world prices; and general need of business adjustment.

While there may be some decline in new plant and equipment expenditures in 1953, it need not be of significant size or of long duration. The recent wave of plant expansion, which has been largely aided by government, has consisted principally of increased facilities for heavy industry. Usually such a trend is followed closely by expansion programs in the consumer goods industries. Certain outstanding industrial organizations which consider some recession in consumer goods sales to be possible in late 1953 nevertheless plan to continue without interruption their present quite ambitious plans of plant expansion.

The current adjustment of world prices in a number of basic raw materials is having important effects on the economies of a number of countries, and that in turn has its effect on our foreign trade. Our own domestic price structure seems to be fairly well stabilized. World price trends are to be watched as possible danger signals, but should not be too greatly feared at this stage. The aim of our own and other central banking systems will be to halt further inflation rather than to bring about serious deflation.

With regard to the supposed need for business adjustment, it may be asked just what sectors of the business structure are so out of balance as to require a major correction. Apparently the answer would have to be that there are no major imbalances in the private economy at this moment and that the principal imbalances requiring correction are federal governmental spending and taxation. The chances for correction of these particular imbalances were vastly improved on November 4.

Summarizing, there seems to be little evidence favoring a more serious recession than the very mild one indicated by the economists' opinion survey, and there is a fair chance that there will be no recession at all. This optimistic view obviously assumes that there will be no large increase in military hostilities in 1953.

In view of the background picture here presented, we estimate very moderate changes in the 1953 pattern of construction activity.

THE 1953 CONSTRUCTION PROSPECT

Basic materials will be in ample supply after the first quarter of 1953, possibly sooner. Restrictions on commercial and recreational buildings

will be eased and then lifted. Construction costs are expected to change but slightly if at all, and housing credit will continue about as now.

Our estimates for the full year 1952 (based on nine months actual) and for 1953 are shown in Tables 1, 2 and 3. There is indicated for the 37 eastern states a total 1953 dollar volume of building and engineering contracts practically equal to that of 1952.

Within that framework, the following changes in dollar volume, as between 1953 and 1952, are estimated: nonresidential building, up eight per cent; residential building, down 11 per cent; total building, down two per cent; public works and utilities, up eight per cent. Dollar volume of private building and engineering contracts is expected to decrease seven per cent; public building and engineering contracts are expected to increase by 10 per cent.

NEW FLOOR SPACE OFF SLIGHTLY

Total new building floor space to be contracted for is estimated at 1,107,000,000 sq ft for 1952, and 1,038,000,000 sq ft for 1953; the indicated decline is six per cent.

New nonresidential floor space, with an indicated overall three per cent increase in 1953, is expected to include increased volume of commercial building, educational and science buildings, hospitals and institutions, public and social and recreational buildings. Declines are indicated for industrial and religious buildings. The reason why anticipated dollar volume of nonresidential building shows more favorably than nonresidential floor space is that certain large atomic energy projects are projected for 1953; these projects will of necessity be recorded in terms of dollars only, since dimensions and floor area figures will not be revealed.

In terms of new floor space and dollars, new residential building is expected to decline 11 per cent in 1953; new dwelling units are expected to decline 12 per cent. These estimates assume that there will be no marked easing of housing credit.

The anticipated eight per cent increase in dollar volume of heavy engineering contracts assumes a five per cent increase in private utility construction and a nine per cent increase in public engineering projects.

There is a continuing heavy demand for community improvement projects of every sort, including schools, highways, water supply and various other categories. The major limitation on the

volume of such projects is the extent to which financing can be made available.

Each year's increment of new structures of every kind added to the nation's existing inventory expands the potential maintenance, repair and modernization market. Also, the current trend

toward larger families stimulates additions to existing houses, transformation of attic spaces, modernization of bathrooms and other types of alterations. The repair and modernization market is thus an expanding one just as is the potential market for new structures.

SLIGHT TREND CHANGES EXPECTED FOR 1953 BUSINESS

Composite opinion of 137 leading economists polled by F. W. Dodge Corporation

MINOR changes only in overall business trends are expected by a majority of the panel of 137 of the nation's leading economists recently polled by F. W. Dodge Corporation. High level stability is expected to characterize general business conditions through most of next year, with the possibility of a quite mild setback in the second half.

Of the 137 respondents to a questionnaire mailed in October, 70 are economists attached to private business and financial organizations, 45 are connected with universities, 16 are economic consultants and six are government men. Nearly all replies were received before Election Day; some made the comment that the election outcome would have little effect on the near-term business outlook but might have considerable effect in 1954 and thereafter. A considerable number stated that their opinions assumed continuation of the cold war on approximately the present scale; since no one voiced an expectation of enlarged war activity, it is reasonable to consider that most, if not quite all, respondents made the same assumption, although the specific question was not asked.

Within the quite narrow ranges of trend changes expected by the large majority of these men, very moderate downturns during the course of 1953 were indicated for the following economic factors: total output of goods and services (gross national product), consumers' price index, all-commodity wholesale price index, industrial production, new plant and equipment expenditures, total construction volume, and housing activity. Wages and personal consumption expenditures are expected to continue very close to current rates.

Four principal reasons were cited by various respondents as possible causes of business recession: tapering off of defense expenditures; possible decline in expenditures for new plant and equipment; repercussions of current declines in world prices; and general need of adjustment. One of that rather small minority expecting a sizable recession in late 1953 indicated the possibility of a ten per cent decline in total employment by the end of the year, but this appears to be a rather extreme view of the unfavorable possibilities. More typical were such comments as: "Adjustments are overdue and the economy will be better after a mild shakedown." . . . "Boom conditions will fade out but no serious decline would appear to be necessary." . . . "We seem to be on a high plateau, with, apparently, sufficient capacity for guns and butter; consumer spending could well offset declines in government spending." . . . "A rolling adjustment is in prospect." . . . One respondent stated: "The downturn will come in 1954, if at all." Quite a number commented on probable intensification of competition in 1953.

GROSS NATIONAL PRODUCT

Total output of goods and services (gross national product) is expected by a majority of respondents to increase moderately during the first half of next year and to recede moderately during the second half. An estimated total for next year, based on median figures among 128 answers, would be \$348.2 billion compared with an estimated \$344.1 billion total for 1952. However, the expected annual rate during the fourth quarter of next year would be \$345 billion compared with an estimated current rate of \$349 billion; on the

other hand, a respectable minority of 49 economists expect next year's fourth-quarter rate to exceed the rate of the current quarter.

PRICES

Moderately declining prices are indicated by the majority of respondents. The consumers' price index for all items was reported at 190.8 by the U. S. Bureau of Labor Statistics for July 15, 1952. Median values of 133 sets of survey answers for future dates were as follows: December 15, 1952, 191; June 15, 1953, 190; December 15, 1953, 189. This index, frequently called the cost of living index, is based on composite consumer prices averaged for the years 1935-1939 as 100.

A similar mild downtrend is expected for wholesale prices. The Bureau of Labor Statistics index for wholesale prices of all commodities stood at 111.8 in July 1952. Median figures for 134 sets of survey answers were as follows: December 1952, 111; July 1953, 110; December 1953, 108. These figures are comparable to the recently revised wholesale price index numbers compiled by the U. S. Bureau of Labor Statistics, which are based on averages for 1947-1949 as 100.

Neither further price inflation nor marked price deflation is indicated by the expected mild price declines shown in the survey answers.

WAGES

Little change is expected for next year in the nation's wage scales. For average hourly earnings in durable goods manufacturing, the median expectation indicated among 117 replies was for a gradual increase from \$1.733 in July 1952 to \$1.77 in December 1953; in non-durable goods industries, from \$1.551 in July 1952 to \$1.58 in December 1953. On the other hand, average hourly pay in building construction was expected to hold steady at \$2.27, about where it stood in June 1952; this is the median value among 112 replies.

INDUSTRIAL PRODUCTION

In estimating the trend of industrial production consideration had to be given to the reduced rate of activity in earlier months of this year that resulted from the steel strike. In February 1952, the Federal Reserve Board's index of industrial production (1935-1939 = 100, seasonally adjusted) stood at 222, just one point under the previous postwar peak of 223. The index

dropped to 193 in July and climbed to 223 in September.

These past records are background for the advance estimates supplied by 133 survey respondents. Median values of their replies indicated the following: December 1952, 223; June 1953, 220; December 1953, 216.

NEW PLANT AND EQUIPMENT: TOTAL CONSTRUCTION: HOUSING

Against an indicated \$27.5 billion investment in new plant and equipment during the current year, the median expectation among 130 respondents was for a \$25 billion investment in 1953. This would be a decline of approximately nine per cent.

One hundred twenty-one economists furnished estimate figures on monthly dollar volume of construction activity. The median expectation is for a moderately declining trend. Against monthly average dollar volumes of \$2.75 billion, as estimated by the Departments of Commerce and Labor, for the first six months of 1952, the economists gave the following indications of future trends: second half of 1952, \$2.7 billion per month; first half 1953, \$2.6 billion per month; second half 1953, \$2.5 billion per month. On a calendar year basis, these figures would indicate for 1953 a decline from 1952 of six and one half per cent in total dollar volume of construction put in place.

A factor in the construction volume decline expected by the survey respondents is the decline they expect in housing activity. One hundred twenty-seven replied with estimate figures on numbers of new non-farm housing units to be started. Translated into annual volume figures, median values of replies work out as follows: total for year 1952 — 1,106,000 new non-farm units; total for 1953 — 1,020,000 units. The indicated decline is eight per cent. Monthly averages during the first half of next year are estimated at 90,000 units, the same as the estimated current rate; monthly averages for the second half of 1953 are expected to drop to an 80,000 unit rate.

PERSONAL CONSUMPTION AND CONSUMER CREDIT

Personal consumption expenditures are expected by a majority of responding economists to remain close to the present record high rate.

As reported by the Council of Economic Ad-

visers to the President, these expenditures aggregated an estimated \$208 billion in the calendar year 1951 and continued at the annual rate of \$214 billion during the first half of 1952. Corresponding figures indicated by 118 economists were as follows: second half 1952, at the \$217

billion annual rate; calendar year 1953, \$215 billion.

A majority of 98 economists expect an increase in consumer credit outstanding in 1953, as against 24 who expect a decrease and eight who expect the amount outstanding to remain the same.

Participants in the survey, besides several who asked for anonymity, were:

A. G. Abramson, SKF Industries; M. A. Adelman, M.I.T.; E. E. Agger, Rutgers; Robert P. Aitkin, Supplee-Wills-Jones; John T. Anderson, Armeo Steel; Robert S. Aries, R. S. Aries & Assoc.; Robert H. Armstrong, Armstrong Assoc.; Harold E. Aul, Calvin Bullock; Paul T. Babson, United Business Service; L. Durward Badgley, Mutual Life; Robert W. Bailey, United Air Lines; C. C. Balderston, Wharton School of Finance; Horace R. Barnes, Franklin and Marshall Col.; Spurgeon Bell; Claude L. Benner, Continental American Life; E. G. Bennion, Standard Oil, N. J.; Frederick M. Bernfield, Office of Price Stabilization; Leonard J. Bising, Bising Business Research and Marquette U.; Charles A. Bliss, Harvard Business School; George L. Bliss, Century Federal Savings & Loan Assn.; Morton Bodfish, U. S. Savings & Loan League; E. H. Boeckh, E. H. Boeckh & Assoc.; J. I. Bogen, Journal of Commerce; Cheleie C. Bosland, Brown U.; Waite S. Brush, Consolidated Edison; F. A. Buechel, Houston Chamber of Commerce.

Robert W. Burgess; Francis J. Calkins, Marquette U.; Cecil C. Carpenter, Kentucky U.; Francis R. Cellia, Oklahoma U.; H. D. Charnier, Continental Can Co.; Homer V. Cherrington, Northwestern U.; K. B. Colby, Univis Lens Co.; P. E. Coldwell, Federal Reserve Bank of Dallas; P. D. Converse; Dudley J. Cowden, N. C. U.; John R. Craf, Louisville U.; Edison H. Cramer, Federal Deposit Insurance Corp.; W. L. Crum, Calif. U.; W. W. Cumberland, Ladenburg, Thalmann & Co.; Frederick A. Dewey; Charles A. Dice, Ohio State; W. J. Donald, Natl. Elec. Mfrs. Assn.

James S. Earley, Wisconsin U.;

Stahl Edmunds, McGraw-Hill; R. J. Eggert, Ford Motor Co.; N. H. Engle, Washington U.; Bay E. Estes, U. S. Steel; Robert Ferber, Illinois U.; M. B. Folsom, Eastman Kodak Co.; Morris D. Forkosch, Brooklyn Law School; E. G. Fraine, Wisconsin U.; John D. Gaffey; Frank R. Garfield, Federal Reserve Board; Roy L. Garis, Southern California U.; Edwin B. George; Charles A. Glover, A. T. & T.; Wm. L. Gregory, Easton-Taylor Trust Co.; John A. Griswold, Dartmouth Col.; C. H. Haines, Harvard Trust Co.; Albert Haring, Indiana U.; John M. Hartwell, Ford Motor Co.; Walter E. Hoadley, Jr., Armstrong Cork; J. E. Hodges, Hughes Tool Co. and Rice Institute; Walter M. Hollowell.

W. J. Holman, Jr., Chicopee Mills; Louis Hough, Pittsburgh U.; James F. Hughes, Auchincloss, Parker & Redpath; Oscar H. Jekel, Reliable Life; Norris O. Johnson, Natl. City Bank, N. Y.; F. B. Jones, Equitable Gas Co.; Homer Jones, Federal Reserve Board; Howard L. Jones, Illinois Bell Telephone Co.; Vant Kebker, Ohio Wesleyan U.; Donald L. Kemmerer, Illinois U.; E. R. King, Eastman Kodak Co.; Richard L. Kozelka, Minnesota U.; Heinrich E. Kromayer, American Maize Products Co.; Francis A. Kutish, Iowa State Col.; Robert Landry; Richard O. Lang, S. C. Johnson & Son; Walter Lichtenstein; Oscar F. Litterer, Minneapolis Federal Reserve Bank; Henry D. Locke, Liberty Mutual Insurance Co.; Dean Long, Evansville Col.; G. M. Looney, Libbey-Owens-Ford Glass Co.; Leverett S. Lyon, Chicago Assn. of Commerce and Industry; T. G. MacGowan, Firestone Tire & Rubber; Sherman J. Maisel, California U.; M. J. Mandeville, Illinois U.; M. H. Marks, Crown Zellerbach Corp.; S. M. Marshall; R. Matthes, Owens-

Corning Fiberglas; Alonzo B. May, Denver U.; Paul W. McCracken, Michigan U.; David C. Melnicoff, Philadelphia Federal Reserve Bank; Oswald E. D. Merkt, Kidder, Peabody & Co.; D. W. Michener, Chase National Bank; K. E. Miller, Armour & Co.; Floyd W. Moore, Western Michigan Col.; Ragnar D. Naess, Naess & Thomas; Philip Neff, California U.; Frank D. Newbury; Robinson Newcomb; Max Nurnberg; Paul H. Nyström, Limited Price Variety Stores Assn.; Ralph H. Oakes, Loyola U. of the South; Joseph E. Pogue, Chase National Bank; E. L. Quirin, Babson's Reports; B. U. Ratchford, Duke U.; S. V. Reiss, Graybar Electric Co.; J. H. Riddle, Bankers Trust Co.; John G. Rolph; John H. Sadler, Kroger Co.

Philip Salisbury, Sales Management; Lloyd Saville, Duke U.; Lloyd L. Shaulis, General Aniline & Film Corp.; C. A. Sienkiewicz, Central-Penn National Bank; Nathan L. Silverstein, Indiana U.; Arthur A. Smith, First National Bank in Dallas; Tillman M. Sogge, St. Olaf Col.; George Soule, Bennington Col.; W. R. Spriggle, Texas U.; Wm. R. Spurlock, Eli Lilly & Co.; Louis T. Stevenson, American Paper & Pulp Assn.; Sandford B. Taylor, Great Lakes Steel Corp.; A. Theodorides, Denver U.; Woodlief Thomas, Federal Reserve Board; William W. Tongue, Jewel Tea Co.

Rufus S. Tucker, General Motors; Robert P. Ulin, McGraw-Hill Publishing Co.; Q. Forrest Walker, R. H. Macy & Co.; Paul J. Weber, Hercules Powder Co.; Ray B. Westerfield, Yale U.; Edward F. Willett, Smith Col.; W. H. Winfield, Monsanto Chemical Co.; Donald B. Woodward, Metropolitan Life; Charles G. Wright, Federal Reserve Bank of Chicago; Ralph A. Young, Federal Reserve Board.

F. W. DODGE CORPORATION

119 West 40, New York 18, N. Y. December 1952

ARCHITECT AS BUILDER: CAN HE PLAY DUAL ROLE?

No, Say Panel Speakers at North Central States Regional Meeting

THE DEBATE touched off by Walter Gropius' declaration of war on American Institute of Architects Rule No. 7—forbidding an architect to engage in building contracting—had a lively round at the final session of the North Central States A.I.A. Regional Conference in St. Paul November 7-8.

Speaking on a panel scheduled to be concerned with proposals to modify Rule No. 7, Philip Will Jr. thought that suggestions that the architect should attempt to re-establish himself as a master-builder were "naïve" and "medieval." His partner, Lawrence Perkins, was sure that the need for the separated function of the conventional architect exists and that the conventional separation of responsibilities between architect and contractor can be demonstrated to be economical and in the client's interest. Prof. Roy C. Jones, head of the School of Architecture of the University of Minnesota, expressed the belief that the architect would only be adding a very large headache if he took on contracting.

Serge Chermayeff, visiting lecturer at Massachusetts Institute of Technology, was concerned that under the present system the architect is seldom in a position to do the basic research required to develop an outstanding structure, and that if he does do so he is not adequately rewarded, since his design can be freely plagiarized. He wanted the designers rewarded by the producers in industry rather than by the consumers, so fees could be spread over many units.

The conference had an attendance of 291, with members from Illinois, North and South Dakota, Wisconsin and Minnesota and sizable delegations from the Universities of Manitoba and Minnesota and from North Dakota State College. A.I.A. President Glenn Stanton and Regional Director Edgar H. Berners represented the A.I.A. Board.

In the opening session both Mr. Stanton and Mr. Berners recommended the formation of a regional council in the district, but since there had been no mention of the subject in the call for the conference, no action was taken. The local chapters are expected to consider the matter and, if favorable sentiment develops, a meeting of delegates to take action will be called.



Above: speaker Richard Neutra and a rather quizzical pair—moderator Charles Granger and Don Barthelme of Houston, member of the panel. Right: the Texas Society's new president, Albert S. Golemon, with the retiring president, Herbert M. Tatum, and the new v.p., E. W. Carroll, El Paso

THE RECORD REPORTS



NEUTRA SPEAKS TO TEXANS

HIGHLIGHT of the Texas Society of Architects meeting at El Paso October 29-31 was a lively seminar "Structural Resources for Architectural Design" led off by Richard J. Neutra of Los Angeles. Other participants were Buford L. Pickens of New Orleans, Don Barthelme of Houston, and John Gaw Meem of Santa Fe. As was to be expected with this topic, there was a sharp difference of opinion among participants in the seminar, and interest was further heightened by unusually pointed and vigorous remarks from the floor.

The El Paso meeting, the thirteenth of the Texas Society, was well attended,

with architects from all corners of the big state on hand. A striking exhibit, "Texas Architecture 1952," showed the varied work of the members, and a lively student competition sponsored by the Featherlite Corporation added a still further display, since all of the prize-winning designs for a bus terminal were on exhibit.

Albert S. Golemon of Houston was elected president, to take office January 1, and E. W. Carroll of El Paso, vice president. George F. Pierce Jr. of Houston was appointed secretary-treasurer. Herbert M. Tatum, retiring president, announced that Austin had been selected by the Board of Directors as the site of the 1953 convention.



—Drawn for the RECORD by Alan Dunn

"Twas the night before Christmas,
And all through the contained space . . ."

GULF STATES ARCHITECTS HOLD THIRD ANNUAL CONFERENCE

ARCHITECTS of the Gulf States Region of the American Institute of Architects, the first district of the A.I.A. to set up a regional council, held their third annual conference October 24-25 at Montgomery, Ala., under the sponsorship of the Alabama Society of Architects.

Built around the theme "Integration of Design, Engineering and Construction of Contemporary Architecture," the conference featured two seminars as well as talks by A.I.A. First Vice President Kenneth Wischmeyer, at the opening luncheon; Eero Saarinen, F.A.I.A., at the annual dinner; and A.I.A. President Glenn L. Stanton, at the final luncheon.

Announcement of the Honor Award and seven Awards of Merit (see page 22) for entries in the regional exhibit was, as always, a highlight of the annual dinner. Members of the Jury of Award were Harold Bush-Brown, head of the Department of Architecture of Georgia Institute of Technology, chairman; New York Regional Director C. Storrs Barrows, Rochester; Douglas Haskell, chair-



The energetic chairman of local arrangements for the Gulf States Conference, Clyde C. Pearson, was nominated for regional director beginning next June



A.I.A. President Glenn Stanton, who had just come from the Eighth Congress of Pan American Architects at Mexico City, with Regional Director Howard Eichenbaum. The conference voted to support Mr. Eichenbaum for second vice president of A.I.A.

man of the editorial board of *The Magazine of Building*; Frank G. Lopez, senior associate editor of ARCHITECTURAL RECORD; and Irving G. Smith, Portland, A.I.A. Northwest regional director.

CONFERENCE SNAPSHOTS



Walter T. Rolfe, Houston: Influence of Engineering and Construction Methods on Contemporary European Architecture



Parker S. Narrows, Pearson, Tittle and Narrows, Montgomery, the retiring president of the Alabama Society of Architects



Eero Saarinen, Bloomfield Hills, Mich., addressed the annual dinner, showed slides of his own work to illustrate his talk



John R. Fugard, Chicago: New Construction Methods and Materials—A Key to Progressive Architecture



Alfred Shaw, Chicago: Control—Design and Engineering. Dean Frank Orr, Auburn, moderated the seminars



Charles Leopold, Philadelphia: Mechanical Engineering's Role in Architectural Progress

In business sessions at the conference, it was voted to support Clyde C. Pearson of Pearson, Tittle and Narrows, Montgomery, as the Council's nominee for regional director and the present regional director, Howard Eichenbaum, for second vice president of the A.I.A., in the elections to be held at the national convention in Seattle next June. Other resolutions supported a proposed survey of architectural education in the Gulf States Region by the Southern Regional Education Board; directed that special committees be established in all chapters to impress Representatives and Senators with the serious threat both to private architects and to design and construction quality posed by the encroachment of Federal bureaus on the profession.

The proposed education survey was described in one of the business sessions by William J. McGlothlin, director of the Southern Regional Education Board, who pointed out that two states in the region, Tennessee and Mississippi, have no schools of architecture, and Arkansas' school is not accredited. The Board hopes in its survey to study both regional requirements and existing facilities, he said.

Encroachment on the architectural profession of both Government and the "package" builder was the subject of a sober warning from Mr. Wischmeyer, who urged that architects lose no time in making their views felt.

From President Stanton there was a report on activities of the Eighth Pan American Congress of Architects in Mexico City.



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3/16" 24 BTU/sq. ft./hr./°F	5/16" 2.2 BTU/sq. ft./hr./°F	3/16" 24 BTU/sq. ft./hr./°F
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increases proportionately with an increase in the temperature difference between the top and bottom of the tile; e.g., with 1/8" KENTILE, heat transmission rate would be 180 BTU/sq. ft./hr. if there were 5°F difference between top and bottom of tile.

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Wide Andersen Casements with picture sash—Charles Klopp, architect

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Wide Andersen Casements for both view and ventilation—Charles Klopp, architect

selection in Andersen Casements

Andersen in its unit catalog. And keep in mind, architects and builders can combine stock Andersen Casement Units and picture windows so that the number of possible combinations has no limit!

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GULF STATES A.I.A. AWARDS

It was an exhibit of winners: each chapter was allowed to submit as many boards as it had delegates (one for each 10 members) and chapter competitions were held to make the selections for the regional exhibit. The regional awards are shown here.

All photos this page: Albert Krouse



Merit Award: Claude Hooton, New Orleans, La.; Skidmore, Owings & Merrill, New York, for Pan American Life Insurance Building, New Orleans



Honor Award: Sherlock, Smith and Adams, Montgomery, Ala., for Walter Bragg Smith Apartments, Montgomery

Merit Award: Sherlock, Smith and Adams for Bullock County Hospital, Union Springs, Ala.



Merit Award: William B. Wiener, for his own residence, Shreveport, La.



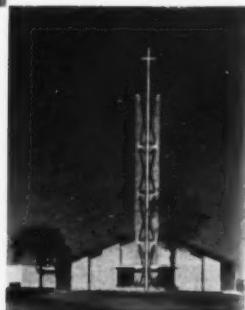
Merit Award: James T. Canizaro, Jackson, Miss., for offices for Marquette Cement Manufacturing Company, Jackson



Merit Award: Pearson, Tittle & Narrows, Montgomery, Ala., for Anniston Junior High School, Anniston, Ala.



Merit Award: Painter & Weeks, Architects, Bruce McCarty, Dsnr., Knoxville, for Bon-Air Motel, Gatlinburg, Tenn.



Merit Award: Brueggeman, Swaim & Allen, Little Rock, Ark., for First Methodist Church, North Little Rock

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LUDWIG MIES VAN DER ROHE DESIGNS A CHAPEL

ILLINOIS INSTITUTE OF TECHNOLOGY has a new chapel, and it makes architectural news because it is the first ecclesiastical structure designed by its own director of architecture, Ludwig Mies van der Rohe.

Mies says he chose "an intensive rather than an extensive form to express my conception, simply and honestly, of what a sacred building should be."

"By that I mean a church or chapel should identify itself, rather than rely upon the spiritual associations of a traditional fashion in architecture such as the Gothic."

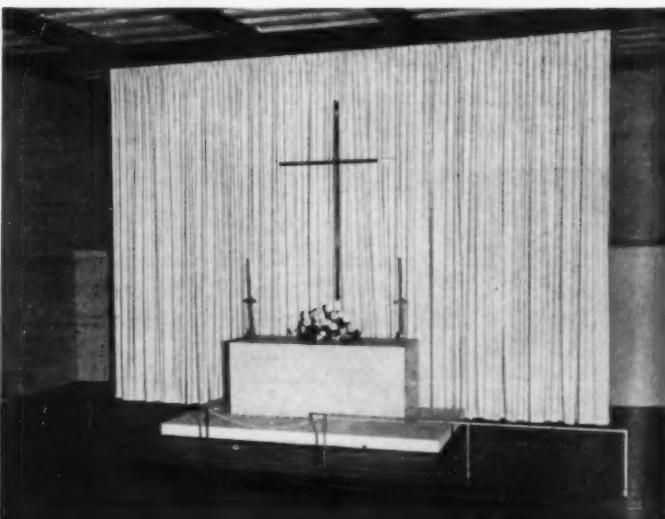
The chapel is 60 ft long, 37 ft wide and 19 ft high. Eastern and western exposures are floor-to-roof panes of glass. Walls are buff brick, topped by a flat roof of prefabricated concrete slabs.

The interior is severely honest. Steel roof supports are left exposed and brick walls unfinished. The altar is a single seven-and-a-half-ton block of Roman Travertine marble; both the altar cross and the altar rail are stainless steel. There is a drapery behind the altar, but it is raw silk in its natural color. If the use of invisible spotlights set in the roof supports to play upon the brick walls seems less than straightforward, it may be noted that the effect actually will be to stress the simplicity of the structure.

Illinois Institute of Technology



The new chapel for Illinois students and staff was dedicated October 26 in rather elaborate ceremonies. It will be known as the Robert F. Carr Memorial Chapel of St. Saviour



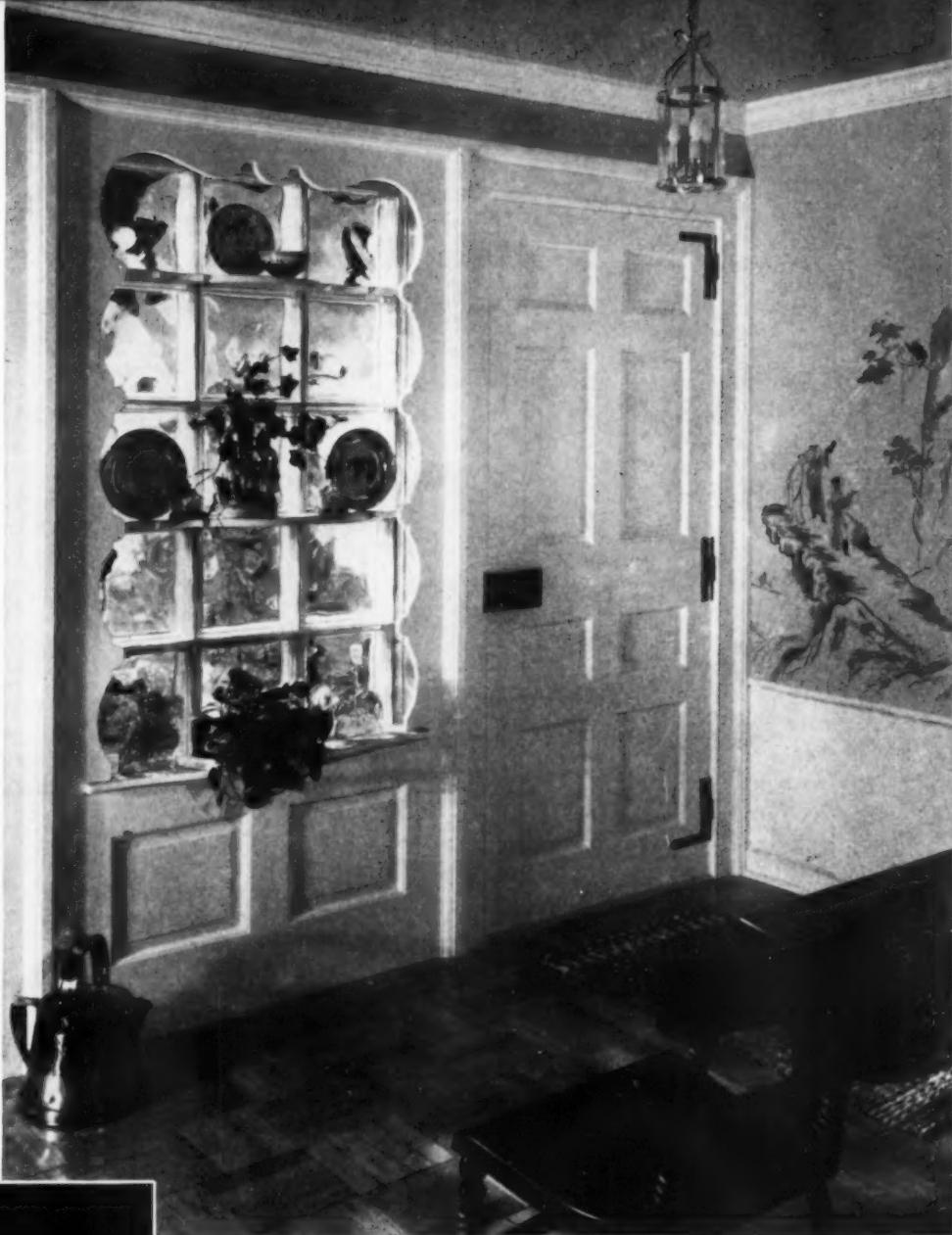
The stainless steel altar cross is 10 ft high by 6 ft wide, weighs 287 lb. It is secured to a wall hidden by the dossal drapery



The reed organ now in use will be replaced later by an "organ of classical design and voicing" to extend in gallery from one of the walls. All of the pipes will be exposed



Here is the doorway opposite but with a panel of regular single glaze glass. With a random clear glass block panel, prying eyes cannot see inside.



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**National Gallery Contest
Narrows to Six Firms**

SIX ARCHITECTS and architectural firms have been chosen to develop further their original proposals for the current competition for a new National Gallery of Canada building in Ottawa. Announcement of the names of the six, who were selected from 104 original entrants in the competition, was made by officials of the National Gallery.

The individual architects and firms include Gordon S. Adamson, Toronto; W. J. McBain, Toronto; Green, Blankstein & Russell, Winnipeg; George A. Robb, Toronto; Vincent Rother, Montreal; and Smith, Munn, Carter, Katelnikoff & Ian Brown, Winnipeg. They have been asked to develop their sketch drawings for final presentation in March 1953. The winner of the competition will automatically be retained as architect for the proposed building.

Professional advisor to the Gallery for the competition is Prof. E. R. Arthur of the School of Architecture, University of Toronto.

**U. S. Bidding Advantage
Is Cited as Unfair**

An unfair advantage held by U. S. contractors over Canadian contractors in competitive bidding on jobs in both countries has been charged by P. G. Wilmut, president of the Canadian Construction Association.

The existence of this handicap, according to Mr. Wilmut, mainly results from the protection afforded U. S. contractors by their government as contrasted with the lack of protection offered by the Canadian government.

Mr. Wilmut commented on the situation as follows:

"It should perhaps be emphasized

White & Hastings of London, Ont., were architects for the Wallace Weinstein residence in London

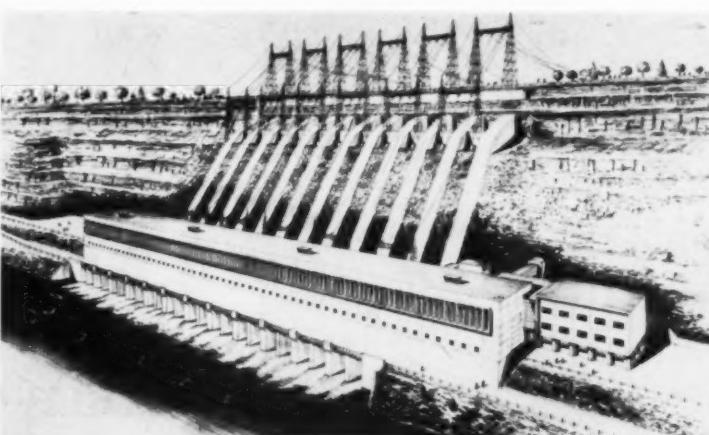
that the Canadian Construction Association welcomes foreign capital, technical skill and fair competition. There are, however, a number of factors that often place American contractors at an advantage over Canadian operators. Many of these can be counteracted by better merchandising of our services on our part. Some, involving tariffs and taxation, require government action to restore the balance.

"Many of the plans and specifications for projects in Canada are prepared in the United States and it is not surprising that American designers are strongly biased in favor of engaging American contractors.

"As is only natural, the specifications drawn up by American designers are usually in accordance with American standards and usually call for American materials and equipment. If Canadian

(Continued on page 32)

Sir Adam Beck Niagara Generating Station No. 2, Niagara River, Ont., is part of the great Niagara River project now in progress. The project, made necessary by the great industrial development in southern Ontario and, to some extent, western New York, involves vast diversion of water from the river above the Falls without impairing the Falls' scenic value, construction of tunnels under the city to carry the water and finally this huge generating station. Architect of the station is Kenneth H. Candy of the Ontario Hydro-Electric Power Commission



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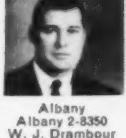
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R. J. Offringa



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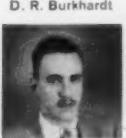
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CANADA

(Continued from page 28)

firms are permitted to bid on these projects they do so at no little disadvantage in relation to American companies also tendering. This situation also deprives Canadian manufacturers of business which would accrue to them if the plans were executed in Canada."



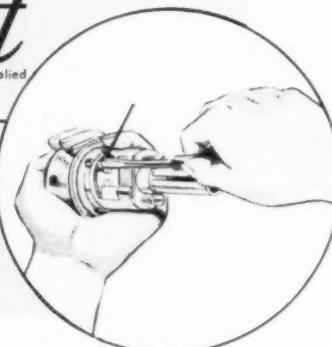
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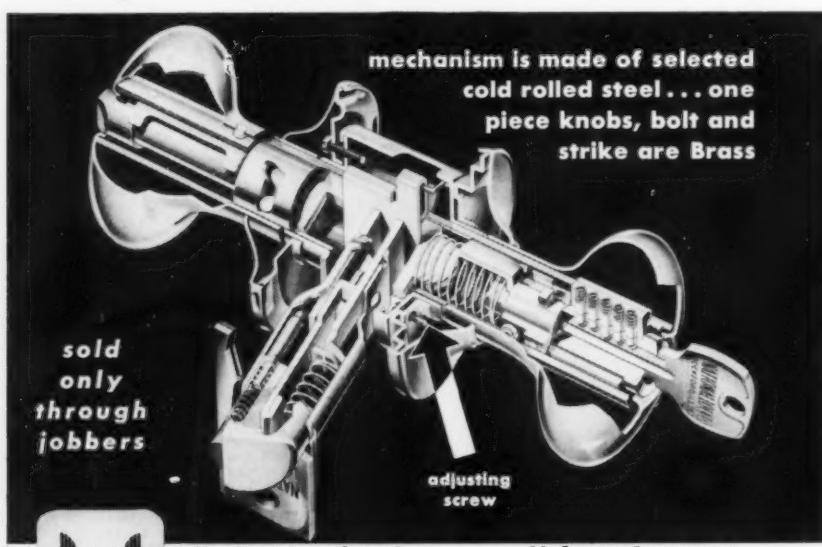
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Above, Walkerton Intermediate Separate School, Walkerton, Ont. This is a Roman Catholic public school and is part of the Ontario educational system. Architect is J. D. Kyles, Hamilton, Ont.

"This inequity," Mr. Wilmut continues, "has been protested by the C.C.A. and the engineering institute of Canada for a number of years but no redress has been received from the tariff board. The U. S. Government, it might be added, makes no exception to its tariff on plans and specifications."

Equipment Problems Told

Citing the growing importance of heavy equipment as a factor in construction, Mr. Wilmut charged that U. S. firms have initial advantages in purchasing such equipment because they can borrow money at lower rates than those available in Canada and because equipment itself is cheaper in the United States.

"This situation," he said, "places American contractors at an advantage over Canadian firms with regard to both permanent or temporary importations. Up until last year it was possible under certain circumstances for firms to bring in equipment for temporary use upon payment of only 1/120th of the tariff and sales tax per month. The rate was doubled to 1/60th per month following C.C.A. representations and since last July all applications for reduced tariff have been referred by the government to the association office for checking as to the availability of the unit in question in Canada. The regulations have been further tightened by the restriction of these tariff concessions ordinarily to a six-month period. Once again I should add that the U. S. offers no similar concessions."

(Continued on page 34)

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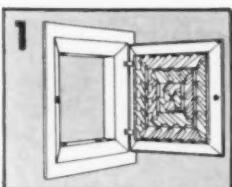
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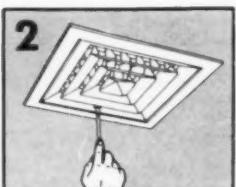
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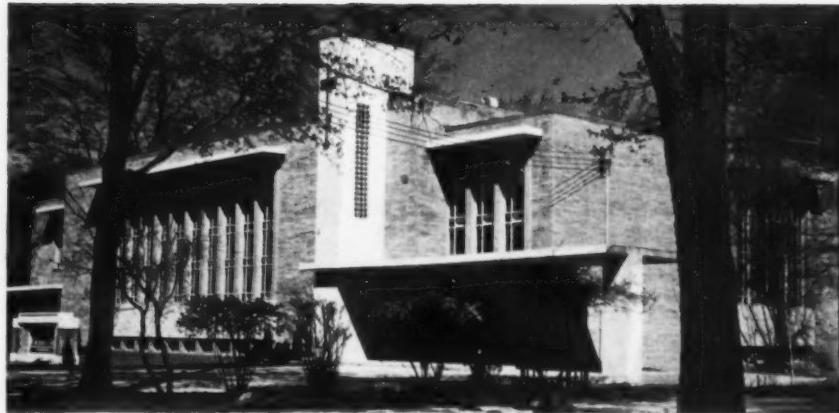
• EXHAUSTERS

THE RECORD REPORTS

CANADA

(Continued from page 32)

sions if a Canadian contractor wishes to take Canadian equipment below the border for temporary use. The full tariff has to be paid. It should be noted that Canadian manufacturers are discouraged from commencing the production



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Gospel Temple, Pentecostal Assembly, London, Ont., designed for economy, of concrete block and brick. Exterior view, above, shows front facade and principal entrance. Interior of hall is shown below. Architect for the building is Philip Carter Johnson, London, Ont.



of this machinery while this tariff situation exists.

Asks End to "Favors"

"The role of a Canadian contractor in the U. S. is not exactly made easy by a series of federal and state ordinances, union regulations, etc., all of which are designed to protect the interests of American firms. Our intention is not to exclude foreign contractors but rather to impress upon industry coming into this country that their construction work can be done more efficiently by Canadian organizations. At the same time, it seems only fair that the special favors available to foreign operators should

(Continued on page 36)



NEW YORK STOCK EXCHANGE

The Nation's Largest
Securities Market
Place

BULLS and BEARS
all agree on the
value of air condi-
tioned comfort



Consulting Engineer present air conditioning system: Charles S. Leopold



Mr. D. A. Kepler, Chief Engineer, in the
photograph above, reports temperature
is held within limits of approximately
1° F. plus or minus.



(a94)

POWERS®

AIR CONDITIONING CONTROL

Used in this World Famous Securities Market

No matter how the "temperature" of the market fluctuates, air conditions on the trading floor of the Stock Exchange remain stable throughout the year.

Back in 1903 the New York Stock Exchange pioneered with the installation of a comfort cooling system which Mr. Donald A. Kepler, Chief Engineer describes as follows:

"It was one of the first systems of its kind applied to a large densely populated market place and by far the largest plant devoted primarily to air cooling and dehumidification. No controls were employed in the cooling season but in winter temperature and humidity were automatically controlled by a pneumatic system."

The air conditioning system now in use, the third since 1903, is modern and reflects the progress of air conditioning during the past 50 years."

Other Prominent Users of Powers Control

TORONTO STOCK EXCHANGE • MIDWEST STOCK EXCHANGE

When temperature and humidity control problems arise contact Powers nearest office. Our 60 years of experience gained in many important buildings may be helpful to you.

Factory and General Offices: Skokie, Ill.

OFFICES IN
OVER 50 CITIES

THE POWERS REGULATOR COMPANY

Established
1891

THE RECORD REPORTS

CANADA

(Continued from page 34)

either be reciprocated by their government or eliminated by our own. Of these two courses of action, I would personally prefer the latter."

Cites Tariff Rates

Mr. Wilmut pointed out that U. S. consulting engineers have the privilege of sending their plans to Canada either on a duty-free basis or upon payment of a negligible tariff. The rates on architectural plans are only slightly higher, he added.

Town Planners Reorganize Defunct Institute

THE TOWN PLANNING INSTITUTE of Canada, defunct since 1931, has been revived. At a meeting held in Montreal the organization, which was active from 1919 to 1931, was reorganized.

A. Cousineau of Montreal was elected president of the new group, with A. J. Walker of Vancouver chosen first vice president and Eric Thrift of Winnipeg second vice president. Dr. E. G. Faludi of Toronto is secretary-treasurer.

Home of Mr. & Mrs. George W. Walker
276 Bal Cross Drive
Bal Harbor, Florida

DESIGNER'S "DREAM HOME" PROVES DEPENDABILITY OF SOSS INVISIBLE HINGES

Architect: Dale Dykema
Ft. Lauderdale, Florida

GEORGE W. WALKER INDUSTRIAL DESIGN

Gentlemen:

In the planning of my house in Bal Harbour, Florida I wanted the best material available and one of the prerequisites was Soss Invisible Hinges throughout the entire house.

In four years time there have been no squeaks or rust or sagging and the Soss Hinges would withstand the salt air and damp weather of Florida by the sea.

Yours very truly,
George W. Walker
GEORGE W. WALKER

"the hinge that hides itself"

SOSS INVISIBLE HINGES are built to last — regardless of climatic conditions! Also, because they have no protruding hinge butt, the Soss Hinge allows you to meet the demands of contemporary design for flush, crisp, streamlined surfaces. Two excellent reasons why architects, the world over, specify SOSS INVISIBLE HINGES whenever they build for the future.

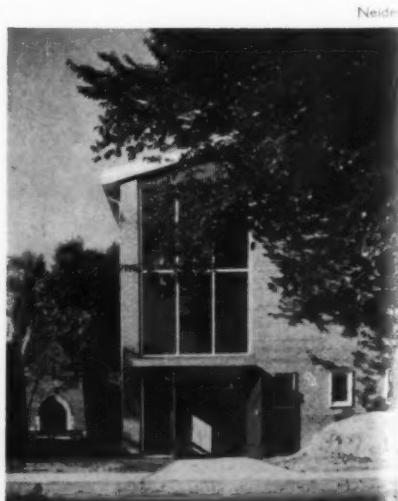
Write for FREE BLUE PRINT CATALOGUE that gives complete details and the many uses of this modern hinge to . . .

SEE OUR CATALOG IN SWEET'S

SOSS MANUFACTURING CO.
21769 HOOVER ROAD • DETROIT 13, MICHIGAN

A.I.A. File No. 27-B-1

Below, Sunday School addition for Manor Road United Church, Toronto, Ont. New addition, right of photo, offers interesting contrast to original building, left background. Architect, W. J. McBain, Associate, Kent Barker, both of Toronto





Home of Robert M. Goheen, Contractor
St. Petersburg, Florida

New! MASONITE SIDING A PACKAGED PRESWOOD PRODUCT

Here it is! The siding that meets every requirement: good looks, ease of application, paintability and economy. It's the newest member of the famous Masonite Preswood® family. Masonite Siding increases the value of every home...new or old.

Deeper shadow! Shadowline wood strips, specially designed for use with Masonite Siding, produce a deep shadow. Permit smaller overlap—put more of the width to work.

Smoother! Forms a perfect, smooth base that won't check and crack the finish. Takes less paint to cover, holds it better and longer. Repainting is *extra* years away.

Stronger! Tough—resists dents, bumps, scrapes and other surface hazards. Won't split, splinter or crack. Won't push nails out.

Lasts longer! Sun, wind, rain, snow, even hailstones don't bother this durable, all-wood hardboard. Lasts indefinitely. Won't rot or corrode.

Saves money! No short lengths. Packaged in convenient 8', 10' and 12' lengths in conventional 12", wide 16" and extra-wide 24" widths. $\frac{1}{4}$ " and $\frac{5}{16}$ " thicknesses.

TESTED FOR YEARS!

Exhaustive tests have proved this superior product, both in the laboratory and in actual application on homes built and lived in. You cannot recommend a finer, more durable siding for any of your homes...large or small!

better hardboards
for better homes



MASONITE® CORPORATION

Dept. AR-12, Box 777, Chicago 90, Ill.

Please send me complete information about the new Masonite Siding and other uses of Preswood.

Name.....

Address.....

City..... State.....

"Masonite" signifies that Masonite Corporation is the source of the product

NPA CLINGS TO MAY 1 AS DATE TO EASE CURBS

Industry Wants Out January 1; How Much Will GOP Victory Effect Materials Decontrol?

NEITHER THE MOST ELOQUENT reasoning from leading segments of the building industry nor the Republican victory at

the polls could move the National Production Authority last month to any abrupt reversal of its announced decision to postpone major relaxation of building controls to May 1.

What the industry wanted, as formally communicated to NPA by the Construction and Civic Development Department of the U. S. Chamber of Commerce, was immediate relaxation

of materials controls and complete suspension January 1.

A task group of NPA's Construction Industry Advisory Committee, meeting in Washington at the end of October, insisted NPA's relaxation date could be moved up to January 1 without any disruption of the defense program.

A barrage of statements urging decontrol from nearly every organized group in the industry was likewise descending on Washington.

The prospect of the first Republican administration in a generation appeared likely to speed wage and price decontrol, as ceilings due to expire April 30 are now regarded as unlikely to be extended; but materials controls authority does not expire until June 30 and NPA did not expect that the new Administration would alter its timetable.

N.A.R.T.B. REPORT DISCUSSES DESIGN OF TV STUDIOS

THE SPECIAL DESIGN REQUIREMENTS of television studios are discussed in the second edition of a cost study series developed by the engineering department of the National Association of Radio and Television Broadcasters.

The report, which emphasizes the urgency of close collaboration of architect and studio engineers at all stages of planning, discusses space requirements as well as general planning problems.

Some specific comments by N.A.R.T.B.:

Antennas — Most existing antennas are 500 ft above ground, only five to ten per cent of new ones will be over 900 to 1000 ft. Location should be high point near center of area to be served. Using single supporting structure or common site for more than one television antenna installation has some advantages, can result in lower initial cost for each party. Antenna "farms" are approved by Civil Aeronautics Administration, are said by broadcast engineers to result in easier receiver installation, better reception.

Location — Joint housing of transmitting and programming plants means lower initial cost, perhaps lower operating cost — duplication of some equipment and some personnel is avoided; need for a complete studio-transmitter link is obviated.

(Continued on page 250)

That modern touch

RESOLITE

Shade from the sun, but with bright daylight inside — that's why Resolite translucent structural panels are bringing the modern home closer to the outdoors. Resolite is better for skylighting because it filters out much of the heat, gives a soft, restful daylit interior, as in this weather-tight, Resolite-roofed patio of a Florida residence.

Resolite is a rugged structural sheet of Fiberglas-reinforced resin plastic, flat or corrugated for added structural strength. The material is unaffected by weather extremes of heat, cold or moisture. It will not rust, oxidize, mildew or rot. It is simple to apply with screws or nails and with ordinary tools and skill; it is easily adapted to roof, wall or partition.

A wide variety of color and corrugation patterns lends Resolite easily to endless possibilities in interior or exterior decoration.

Beautifying the interior or exterior by either reflected or transmitted light, Resolite panels are ideal for decorative and utility partitions, with a selection of color for any motif. The effect of length and height is enhanced by utilizing the corrugation patterns.

For complete information, and name of nearest distributor, write Dept. A-4

RESOLITE Corporation
ZELIENOPLE, PA.

AMERICA'S *Number 1* HARDWARE



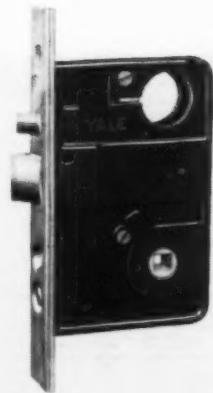
hardware was exclusively"

writes THE KEITH-SIMMONS COMPANY, HARDWARE CONSULTANTS



◀ **THEY SPECIFIED YALE CLOSERS** because of the trim beauty and quick, quiet closing action made possible by the new type rotary piston. This famous closer also has two open positions: ajar for ventilation and wide open for passage. Available in several sizes and finishes.

▶ **THEY SPECIFIED YALE TRIM** to keep pace with the smart new beauty of the Electric Service Building. Both the G35 knob and the GT87 escutcheon are cast metal and finished in dull chrome.



▲ **THEY SPECIFIED YALE LOCKS.** Ease of installation . . . the extra durability of bronze front and bolts . . . five pin-tumbler security . . . and master-key feature made the Yale 7656 best suited to meet the rugged requirements of the builder and architect.

YALE & TOWNE

Yale is a registered trade mark

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division,
F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.		Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	
	Brick	Frame		Brick	Steel	Brick	Frame		Brick	Steel
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
July 1952	278.1	275.0	270.9	273.8	271.4	219.1	220.7	213.5	211.5	215.5
Aug. 1952	279.7	276.6	274.4	276.5	274.3	219.1	220.7	214.2	211.9	216.8
Sept. 1952	279.7	276.6	274.4	276.5	274.3	219.1	220.7	214.2	211.9	216.8
	% increase over 1939			% increase over 1939				% increase over 1939		
Sept. 1952	126.5	126.0	109.9	107.3	110.8	153.9	165.6	125.2	117.6	128.9

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
July 1952	260.9	254.2	252.8	259.0	252.9	253.1	248.0	247.8	251.4	252.4
Aug. 1952	260.7	254.0	253.0	259.1	253.7	253.1	248.0	248.2	251.6	253.1
Sept. 1952	260.9	254.1	253.5	259.7	254.0	252.6	247.8	248.5	251.6	253.2
	% increase over 1939			% increase over 1939				% increase over 1939		
Sept. 1952	136.8	137.5	114.8	116.8	113.4	139.2	149.5	111.7	106.4	117.3

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110

index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

95

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

110

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

RUSCO Galvanized Steel PRIME WINDOWS

• HICKSVILLE, LONG ISLAND, BUILDER SAYS:

"We Wholeheartedly Recommend
Rusco Prime Windows As Best
For The Home of Today" . . .

BREWSTER



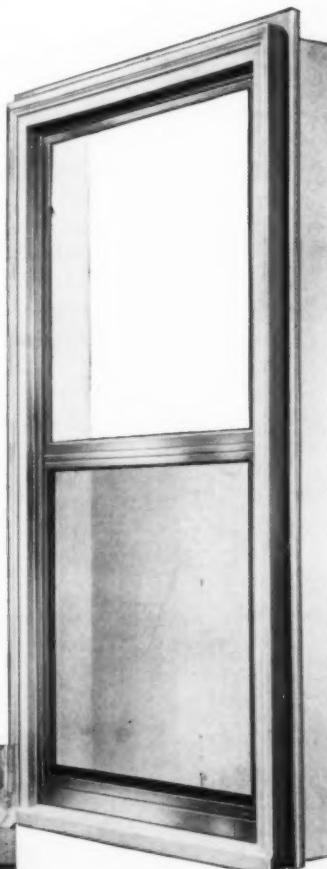
*Living...
In Country
Style*

R.D. #1 HICKSVILLE, N.Y. HICKSVILLE 2-1794

Every prospect for a new home wants the best he can afford. In our split-level Brewster Manor Homes and our popular-priced Knickerbocker Homes we are providing for every creature comfort -- every modern desire for better, easier living. Rusco galvanized steel Prime Windows embody the features that meet our rigid specifications. With Rusco Prime Windows we can offer both a prime window and a companion insulating window in one permanently installed unit.

Features such as Magicpanel Ventilation, no screens or storm sash to change, glass and screen panels which are removable from the inside, are tremendously popular conveniences that help clinch many a sale. Without any qualification whatsoever, we wholeheartedly recommend Rusco Prime Windows as a must for modern home living today.

*Lee Schoenfeld
Lee Schoenfeld
Alexander Muss*



A Fully Pre-Assembled Window Unit

Factory-Painted, Hardware Attached—

All Ready to Install in Window Opening!

GLASS • SCREEN • BUILT-IN WEATHERSTRIPPING

INSULATING SASH* • WOOD OR METAL CASING

...OR STEEL FINS

*OPTIONAL

Glass and Screen Inserts easily removed from inside for convenience in cleaning. The Rusco removable sash feature has tremendous appeal as a convenience and safety feature.



RUSCO

Galvanized
Steel

PRIME WINDOW

VERTICAL SLIDE

THE F. C. RUSSELL CO.

DEPARTMENT 7-A.R-122 CLEVELAND 1, OHIO • IN CANADA: TORONTO 13, ONTARIO

Completely Installed
in as little as
5 minutes!



1. Rusco Prime Window, with glass and screen panels removed, is taken from stockpile . . .



2. . . . placed in stud opening and plumbed . . .



3. . . . nailed to studs . . .



4. . . . glass and screen panels slipped into slides . . .



5. . . . and in less than 5 minutes the fully-installed window is ready for service!

REQUIRED READING

THE ROOTS OF CONTEMPORARY AMERICAN ARCHITECTURE

Roots of Contemporary American Architecture. By Lewis Mumford. Reinhold Publishing Corporation (330 West 42nd St., New York, N. Y.) 1952. 6 by 9 in. 460 pp. \$7.50.

REVIEWED BY JOSEPH HUDNUT

All those persons who love modern architecture—and there are persons who do love it!—will applaud Lewis Mumford for having set before them a table so delightful and so fortifying.

Mr. Mumford has brought together in one volume a collection of excerpts from the writings of American authors who from time to time over a space of a hundred years have commented upon architecture. These form as a whole an anthology of opinion in which the reader may trace the development, not of that art of architecture which de-

velops only in space, but of the ideas which have played so critical a part in the development of architecture. These ideas, presented by more than 25 writers each of whom is in some way distinguished for insight and artistry, gain exceptional strength and beauty from the light which each radiates upon the others.

Among these ideas two have had the greatest influence upon American design. These are, first, the concept of architecture as a social phenomenon and, second, the concept of architecture as an art having its basis in structure and in the industrial processes through which structure is created.

These ideas, with infinite variations, appear in all of the texts brought together in "Roots of Contemporary

Architecture." We look at them from as many points of view as there are authors included—as if we were to see a cathedral nave through as many windows. And what eloquence they gain from translucencies at once so clear and so colorful!

Functionalism cannot long remain arid or doctrinal when we see it through the reasonable glass of Horatio Greenough and then through the romantic glass of Henry David Thoreau; when it is equally illumined by the agonized rhetoric of Louis Sullivan and the cool common sense of John Wellborn Root; when it is glorified by the prophetic voice of Matthew Nowicki and the blythe idealism of Catherine Bauer. And it will not be denied that functionalism is in need of this apotheosis!

THE PLANNING OF ELEMENTARY SCHOOL BUILDINGS

Planning Elementary School Buildings. By N. L. Engelhardt, N. L. Engelhardt, Jr. and Stanton Leggett. F. W. Dodge Corporation (119 West 40th St., New York, N. Y.) 1952. 8 $\frac{3}{4}$ by 11 $\frac{1}{2}$ in. 275 pp., illus. \$12.50.

REVIEWED BY JOHN W. MCLEOD

This volume deserves a place on the bookshelf of any architect who is designing, or who expects to design, an elementary school building. The authors, members of a well-known firm of educational consultants, have wisely

writing, and working models in the community.

A wide variety of enterprises may be used from time to time, for example, an insurance company to insure children against loss in breakage of dishes, a cooperative enterprise to raise hamsters for sale, a parking authority to operate a bicycle parking area, and similar activities.

chosen to emphasize that particular segment of school planning with which they are generally identified—interpretation of modern educational activities in terms of the facilities needed to house them.

Perhaps a word of warning should be entered here for the benefit of those persons, whether educators, administrators, or architects, who might expect to find, in a book with this title, an assortment of predigested, tried-and-true

school plan layouts. They won't find them here! In fact, this book contains a minimum of drawings, and these are generally in the form of freehand diagrams to illustrate a particular point.

Obviously, a work of this kind is not directed solely to architects, but probably will reach into all fields of school administration from superintendents to school business officials and students. Architects then, should bear this in mind when appraising some of the more technical chapters, which may appear to them to be over-simplification of rather complex subjects.

(Continued on page 18)

TYPICAL ACTIVITIES

- Operating a bank
- Playing store, firehouse, courtroom, post office, newspaper office, etc.
- Operating student government, modeled on local community
- Operating cooperatives, parking authority, corporations, companies (to sell hamsters, do research, etc.)
- Operating a newspaper

FACILITIES NEEDED

- Open floor area
- Props and prop storage
- Hollow blocks, crates, lumber to use in building a structure
- Storage for building materials
- Storage for bank records, post office records, and records of student organizations
- Storage for newspaper materials, records, etc.
- Use of duplicating equipment
- Platform



Illustration from Engelhardt and Leggett book, above. Portion of page, left, shows use of charts to show facilities needed for classroom activities

INSULATED METAL WALLS

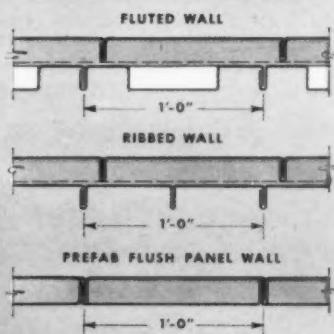
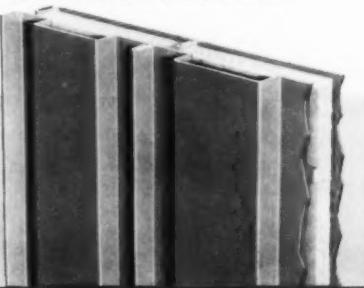
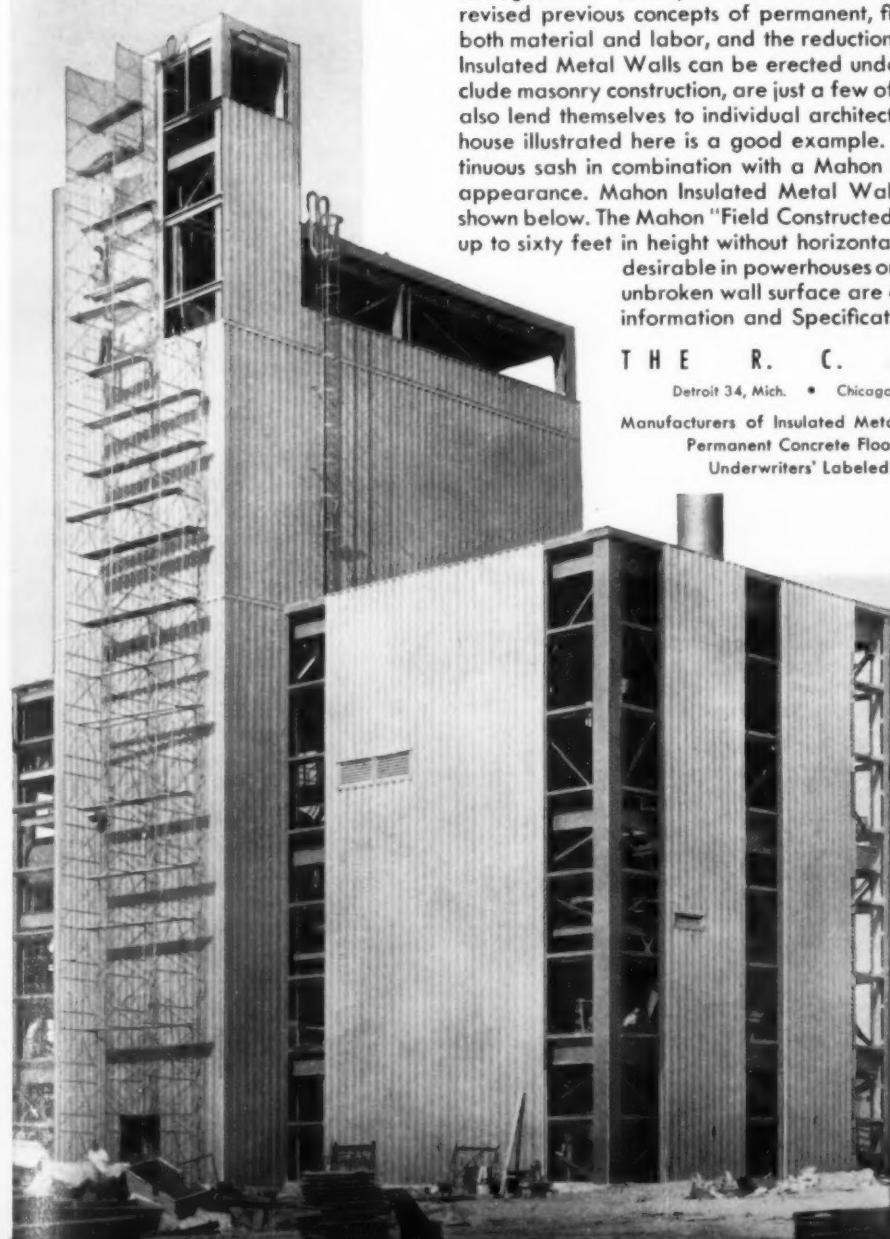
for INDUSTRIAL and COMMERCIAL BUILDINGS
ALUMINUM, STAINLESS or GALVANIZED STEEL

Insulated Metal Walls continue to gain favor with both Architects and Owners throughout the country. And, the reason is obvious . . . these modern walls have revised previous concepts of permanent, firesafe construction. Their lower cost, in both material and labor, and the reduction in construction time—plus the fact that Insulated Metal Walls can be erected under weather conditions which would preclude masonry construction, are just a few of the advantages. Insulated Metal Walls also lend themselves to individual architectural expression in design—the powerhouse illustrated here is a good example. In this building, vertical panels of continuous sash in combination with a Mahon Fluted Metal Wall produces a striking appearance. Mahon Insulated Metal Walls are available in the three patterns shown below. The Mahon "Field Constructed" Fluted or Ribbed wall can be erected up to sixty feet in height without horizontal joints—a feature which is particularly desirable in powerhouses or other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for complete information and Specifications, or write for Catalog No. B-53-B.

THE R. C. MAHON COMPANY

Detroit 34, Mich. • Chicago 4, Ill. • Representatives in All Principal Cities

Manufacturers of Insulated Metal Walls; Steel Deck for Roofs, Partitions and Permanent Concrete Floor Forms; Rolling Steel Doors, Grilles and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.



The Over-all "U" Factor of the various Types of Mahon Insulated Metal Walls is Equivalent to or Better than a Conventional sixteen inch Masonry Wall.

In the Pennsylvania scene, the insulated Metal Walls up to the first floor line are constructed without a horizontal joint. Continuous Sashless Wall Panels are the only type of insulation used.

M A H O N

The Architect's Question Box



**Published now and then in
the interests of wood finishing
by FIRZITE® and SATINLAC®, those
two little WIZARDS WITH WOOD.**

QUESTION: Are several coats of wax alone a sufficient finish on wood, as many claim?

ANSWER: Definitely not. The pores of the wood need more sealing than the wax alone will provide in order to prevent dust, dirt, etc. from working into the wood and causing discoloration. Wax is primarily intended to increase the sheen. SATINLAC provides a hard, protective coat for the wood and an excellent base for wax.

QUESTION: Can SATINLAC be used on open-pored woods like Oak without first applying a paste wood filler?

ANSWER: Definitely. In finishing open-pored woods with a product which produces a "built-up" effect a filler must be used or a "pock" marked effect may result. However, SATINLAC protects the wood thoroughly without this "built-up" effect and even when used on open-pored woods without a filler it produces a natural "woodsy" effect. Of course, SATINLAC can be used over paste wood fillers.

QUESTION: Is SATINLAC costly to use?

ANSWER: Definitely not. SATINLAC costs about the same as a good varnish. However, the labor involved is generally less. A two-coat SATINLAC finish can easily be applied in one day, as each coat dries in about 4 hours and requires only a light steel-wooling instead of the laborious rubbing required for most varnish finishes.

QUESTION: How is Pine trim treated to blend with paneling or doors of Mahogany, Oak, Walnut, etc?

ANSWER: FIRZITE is the answer to this problem. The practical painter can make any color stain by adding colors-in-oil to Clear and White FIRZITE and thus finish the trim to match the panels.

*If you have any other problems on wood finishing
let us help you. Write also for specifications.
May we send you a blond Birch panel showing SATINLAC finish?*

UNITED STATES PLYWOOD CORPORATION
Dept. 153, 55 West 44th Street, New York, N. Y.



REQUIRED READING

(Continued from page 46)

For the architect, the greatest benefit will come from a close study of the forepart of this book, wherein the authors have done an outstanding job of exploring the entire modern elementary school plant — from classroom to custodial space, analyzing and evaluating each and every activity which might take place within a given area. This is the first time, to this reviewer's knowledge, that such a comprehensive documentation of function has been attempted in the school field, and as a result, the authors have succeeded in producing an excellent guide-book which should clear-up, particularly for architects, some of the fog of modern educational terminology and practice.

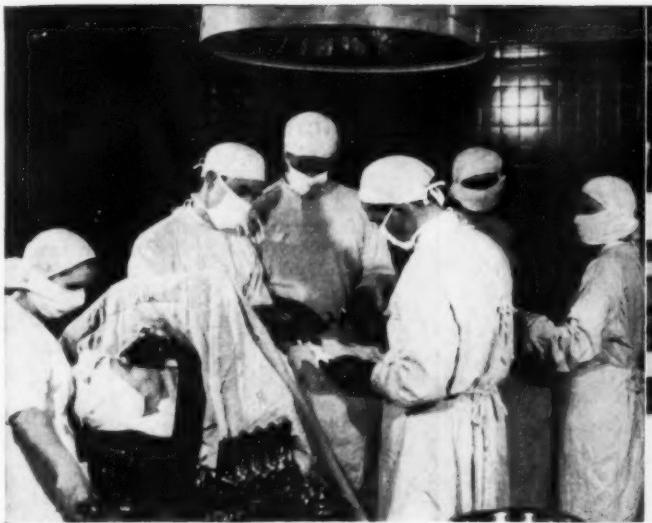
To give the reader some idea of the scope of these analyses of classroom activities it need only be said that some twenty separate activities, including the three R's and such other diverse subjects as "cooking," "dancing," and "puppetry" are carefully scrutinized and the facilities needed to accommodate them are suitably tabulated.

While it is quite true that the architect is not required to make provision in all cases for separate facilities for each and every one of these activities, since many of them make use of the same equipment or space, it is clearly the architect's responsibility to bear in mind the needs to be met in planning the space. A section of this book is devoted to the various elements which, when added together, make up an integrated and workable classroom, but the authors do not themselves attempt to "package" a solution. This is presumably left to the architect for his consideration of the individual situation.

Beside the classroom, considerable space is given over to the study of all of the specialized educational spaces, such as the library, lunchroom, multipurpose room, etc., and also in the development of outdoor educational areas. All of the auxiliary and service spaces are treated in more-or-less detail.

The section devoted to "Organization and Size" of school plants is also worthy of careful reading, particularly that part which discusses, in some detail, the "Home School." This trend toward the smaller, neighborhood type of building is receiving serious consideration in many areas and considerable discussion

(Continued on page 304)



HOSPITALS



FACTORIES

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Safeguard the buildings you design against lighting failure. In many cities emergency lighting protection is a legal requirement for hospitals, schools, stores, theaters, restaurants, factories and other buildings where large numbers of people assemble. Similar legislation is being considered in other cities. It is important, for despite all precautions of utility companies, storms, fires, floods and accidents can interrupt normal supply of current.

Exide provides units and systems for every emergency lighting requirement. Large systems for entire buildings and groups of buildings. Other systems and units for selected rooms, corridors, stairways, exits. Small portable units—the Exide Lightguard—for localized needs. In each system and unit, batteries are always fully charged and ready to respond *instantly and automatically*.

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Estimating Chart to Cover 1,000 Square Feet of Roof Area*

PLYSCORD	RATE	TOTAL	LUMBER	RATE	TOTAL
1,056 sq. ft. $\frac{3}{8}$ " or $5/16$ "			1,200 ft. b.m. 1x8 shiplap		
Nails 6d-12 lbs.			Nails 8d-20 lbs.		
Carpenter 6 Hours			Carpenter 11 Hours		
Helper 3 Hours			Helper 5 Hours		

TOTAL COST IN PLACE.....

TOTAL COST IN PLACE.....

*Data developed from Walker's "The Building Estimators' Reference Book"



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Plywood
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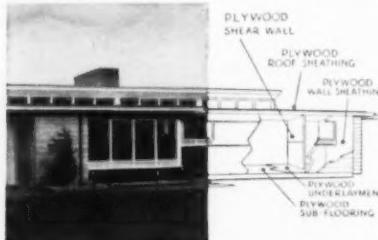


• PlyScord is the unsanded construction grade of interior-type plywood bonded with highly water resistant glues. For subflooring, sheathing, backing, one-use forms. PlyScord is a registered grade trademark identifying quality plywood manufactured in accord with U. S. Commercial Standards and inspected by Douglas Fir Plywood Association (DFPA).

PANEL DISCUSSION

Plywood Structural Strength Vital In Windy Location

Situated on a picturesque view-bluff overlooking Puget Sound—and subject to the same strong prevailing winds which blew down the first Tacoma Narrows Bridge—this modern home relies



on the strength and rigidity of PlyScord grade plywood sheathing throughout. Even the interior cross walls have a membrane of plywood to give added lateral bracing. In all, four short shear walls are used to work with plywood sheathing and subflooring to compensate for loss of rigidity due to unusually large glass areas on the view side of the home.

Architect-owner, Charles T. Pearson, of the Tacoma, Washington, architectural firm of Lea, Pearson and Richards, says that the unusually windy location and lavish use of glass made the specification of plywood doubly important. "The strength and rigidity of the material definitely contributes to better construction," he says.

Plywood Forms Play Important Role in Parkmerced Project



Three prime factors—re-use, speed and appearance—dictated specification and use of plywood forms for both interior and exterior concrete surfaces on the new Parkmerced apartment project, San Francisco.

According to W. A. Bender, superintendent for Starrett Bros. & Eken, Inc., contractors on the job, plywood panels gave up to 15-18 re-uses, helped speed formwork application time and construction costs by about 20 percent and produced uniformly smooth, fin-free concrete surfaces. In fact, Bender reports, plywood-formed ceiling slabs were smooth enough to be painted after a minimum of grinding and application of spackling material—permitting a savings by eliminating expensive plastering.

(Advertisement)

Large built-up form sections 11 feet high and ranging from 20 to 48 feet long, were used on the walls. Forms were built of $\frac{3}{4}$ " Exterior plywood, nailed to 2x4 studs, 12" o.c., backed by 2x4 and 3x4 walers. After each pour, sections were stripped and raised to the next story. Forms were used 13 times on the eleven 13-story tower buildings, then in some cases re-used further on the two-story Colonial type apartment buildings which dot the 200-acre tract.

Parkmerced was planned and built by Metropolitan Life Insurance Co. General Contractor: Starrett Bros. & Eken, Inc. Dinwidde Construction Co. was the subcontractor on concrete work. Leonard Schultze & Associates were the architects, with the firm of Thompson and Wilson serving as architectural consultants.

Single Wall Construction Used For California Studio



A single thickness of Exterior-type Douglas fir plywood attached to the inside of 4x4 posts serves as the exterior walls of this striking Corona del Mar, California, ceramics studio and shop. Designed by California Architect Frank Gruys, the structure also uses Douglas fir plywood roof sheathing.

Exterior-type fir plywood was specified for single-thickness walls because of the unique combination of properties which permits the panels to act simultaneously as both a structural and finish material.



Because good lighting is needed for work done in the studio, the building features large glazed areas. With so many windows, the insulating quality of double walls is not important. In addition, the mild climate provides good conditions for the use of plywood single wall construction.

Exterior walls of the Kay Finch studio are A-A grade Exterior plywood placed on the inside of 4x4 posts on four foot centers so that the plywood presents a smooth wall on the inside. Windows are top hung or are in fixed sash between posts.

The overhanging roof which reduces sun glare forms a definite architectural feature. Exterior plywood $\frac{5}{8}$ "-thick is used for decking beneath built-up roofing.

(Advertisement)



Plywood Built-Ins Often Mean The Difference Between and

NO DOUBT about it, plywood built-ins have buy-appeal. Space-thrifty plywood storage wall, built-in dining bar or crisp kitchen cabinets can often mean the difference between a house that's snapped up the minute it's offered and one that's a drug on the market—an important fact to consider as selling becomes more and more competitive.

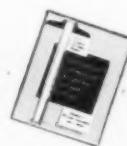
And it's so easy to add client and customer-winning distinction to your homes with plywood built-ins. For no other material is so adaptable to specific design and space requirements. With plywood, you can make the built-in fit the house—exactly. No bothersome juggling of "stock size" units. No limit to size, design, finish or color. Plywood works quickly, easily with ordinary tools. It is equally adaptable for construction of shop-fabricated units. Plywood won't split, chip or puncture. *It's the logical material for every built-in.*

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LIBRARY with EYE APPEAL



Hutchinson Public Library, Hutchinson, Kansas
English, Miller & Hockett, Architect

Structural Corrugated Glass by Mississippi Gives Modern Look to Well-Designed Structure

This library took a page from one of its own books. Carefully planned treatment of entrance and exterior walls to take fullest advantage of the properties of translucent glass achieves an atmosphere that invites the reader. The entire room is flooded with soft, natural light by day... glows a warm welcome to patrons at night. The effect is that of clean, crisp, modern efficiency that still retains a friendly feeling.

Structural Corrugated Glass by Mississippi is being specified by architects everywhere for its beauty and utility. This modern material offers new scope for talents, suggests numerous ways to handle design problems. Manufactured in a wide variety of patterns and surface treatments, Mississippi Figured glass is available wherever quality glass is sold. Select glass by Mississippi for your plans and add sparkle to your ideas.



Write today for free booklets, "Figured Glass by Mississippi" and "Modernize Your Home With Decorative Glass". Contain many ideas on ways to utilize this dramatic material in modernization or new construction.



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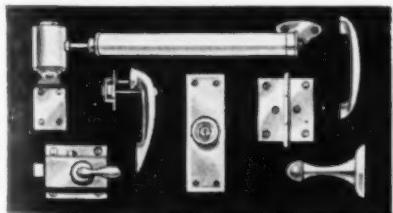
Adverse climatic conditions and weathering have no effect on rust and corrosion-resistant aluminum used for combination storm-screen doors. In addition to assuring homeowners of longer life and absolute minimum maintenance, these durable, always attractive aluminum doors also permit fast, easy interchangeability of lightweight screen and storm panels. There are many excellent makes of these doors on the market today. Write for list of aluminum storm-screen door manufacturers.

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Aluminum thresholds give that important "first" impression in quality home and commercial construction. Always bright, aluminum thresholds are economical in both initial cost and maintenance. They are the lowest in cost of non-rusting metals. Enduring aluminum thresholds assure a permanently snug relationship to doors. The wide variety of Reynolds designs provides a type for every entrance or between rooms application—including pivot door installations. Aluminum thresholds are available through architectural metal distributors.

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Aluminum hardware completes the white metal theme in modern design. Like other aluminum trim, the natural color of aluminum hardware, in a wide range of finishes, harmonizes with all decorative schemes in residential, commercial and industrial buildings. Aluminum hardware won't rust or corrode—stays bright and attractive. A full line of aluminum hardware—closers, escutcheons, knobs, hinges, stops, strike plates, push bars—is available. Write to Reynolds for list of aluminum hardware manufacturers and for information on any other architectural aluminum applications.

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MODERN DESIGN HAS ALUMINUM IN MIND



One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this article, and others in the series, may be had free upon request.

AIR CONDITIONING for Modern Food Processing and Packaging Operations

By T. W. Reynolds



T. W. REYNOLDS—formerly Chief, Air Conditioning Div., Abbott, Merkt & Co., N. Y. During Mr. Reynolds' varied career in air conditioning, he has contributed greatly to the advancement of the profession. A wartime consultant to the W.P.B., he passed on all mechanical construction in the U. S.

Among his many outstanding achievements was designing the air conditioning system used in the Perisphere at the New York World's Fair, 1939.

The food processing industries were the largest single industrial group reported by the last Census of Manufactures, numbering close to 40,000 plants. During 1950 and 1951, the food group invested about \$600 million in new plants and equipment each year and is expected to spend more than this in the years ahead.

TECHNICAL TREND

Current emphasis continues to be on better engineered and equipped processing and packaging operations. The trend toward continuous production operation, and away from batch processing, continues. This increases the need for new factory alterations and construction design, and for new refrigeration and air conditioning equipment.

Food plants use more process refrigeration and air conditioning than any other industrial group. More and more attention is being paid to the multiple uses of air conditioning in the economics of the food industry . . . including humidification, dehumidification, air circulation, air cleaning, heating and cooling. While comfort cooling for both plant and office workers, bringing improved productive efficiency, is a modern consideration of good management, the prime incentive is the necessity for accurate plant temperature and humidity controls in order to keep a wide variety of products uniformly up to specifications.

HUMIDITY CONTROL

Humidity requirements cover a wide range, varying with the nature of the product and stage of the processing operation. Some baked goods, such as melba toast, crackers, etc., and crisp goods, like cereals, require not over 10% relative humidity. Flour contains 13% moisture, by weight, and would rapidly lose it if stored in too dry an atmosphere. Once lost, the humidity cannot be regained by mixing. Flour is also susceptible to odor and mold.

Many products, in production or in secondary use as ingredients, need close protection because they are hygroscopic and sensitive to moisture conditions. These include dehydrated vegetables, herbs, salts, sugars, milk powders, malt powders, etc. All dry mixes, generally, need controlled humidity to assure a stable and standardized product, from ingredient storage through processing and packaging.

Candy and products using much sugar, glucose, corn syrup, dextrose, sucrose and similar substances also need close control to regulate the crystallization and grain structure of the finished goods. Sugar-coating chewing-gum centers or almonds, for example, is ideally done within a range of 35% r.h. at 90°F. to 50% r.h. at 75°F. The following table shows some representative temperature and humidity ranges in processing various foods.

PROCESS	TEMPERATURE (DRY BULB)	RELATIVE HUMIDITY
Fruits for canning (storage)	36°F.—45°F.	80%—85%
Vegetables canning (storage)	36°F.—45°F.	65%—85%
Candy coating room	60°F.—65°F.	50%
Candy enrobing (cold end)	65°F.—	50%
Candy enrobing (hot end)	80°F.—	30%—50%
Candy hard	75°F.—65°F.	40%—45%
Candy hand dipping	62°F.—65°F.	50%
Candy marshmallows	75°F.—	35%
Candy nougats	65°F.—	50%
Candy packing	65°F.—	50%
Candy storage	65°F.—	50%
Flour (storage)	65°F.—75°F.	55%—65%
Bread coolers	70°F.—75°F.	80%—85%
Brick cheese (salting rooms)	80°F.—90°F.	50%—60%
Brick cheese (curing rooms)	80°F.—	45%—65%
Brick cheese (storage rooms)	60°F.—	15%

Humidity control also plays an important part in packaging. Paper and paper products are highly hygroscopic. Packaging and labeling machinery works better when the paper items have been pre-conditioned in a humidity-controlled storage space prior to use. Paper works well at 50% r.h. at 65°F. to 75°F., while a lower relative humidity is desirable for Cellophane.

AIR CIRCULATION

For many years it was not unusual to encounter temperatures of well above 100°F. in many food processing rooms—heat not only from cooking operations, but also in rooms where a mass of machinery and connected horsepower were in use. In summer, these heat conditions would frequently become unbearable. Today, with better building construction and insulation against the summer sun and winter heat loss, plus cooler lighting, hoods and exhaust fans over high-heat units, improved general ventilation and air conditioning control have now become not only possible, but profitable in terms of product control and employee efficiency.

AIR CLEANING

The value of filtered air has been gaining recognition during the last thirty years. Meat packers eliminated the moldy bacon problem by installing bacteria filters in the air ducts of their slicing rooms. Powdered milk manufacturers found that by using filters they could produce a product that would stand up under severe climatic conditions.

Air-borne organisms are carried on dust particles; so mechanical filters, packed with a suitable fibrous material, are used to remove the coarse particles of dust. If very fine matter is suspected, or very close control is essential, electrostatic filters are installed in addition.

Methods have been developed by which the effectiveness of filters may be tested. A fine diffuse spray of a suitable bacteria is introduced at the fresh-air inlet. Samples of the air, before and after passing through the filters, are exposed to a nutrient culture medium. These are incubated and the colonies counted.

AIR HEATING

With a duct system installed to provide for air circulation at a suitable velocity, and for the control of humidity, it is only logical to install heating coils in the air system for winter heating. This eliminates radiators, risers, and many overhead pipe runs and pipe hangers, which are dust traps and create additional maintenance problems.

The Btu. capacity of the coils, depending on the steam pressure, is figured on the basis of internal plant heat factors in connection with the average winter low temperature level.

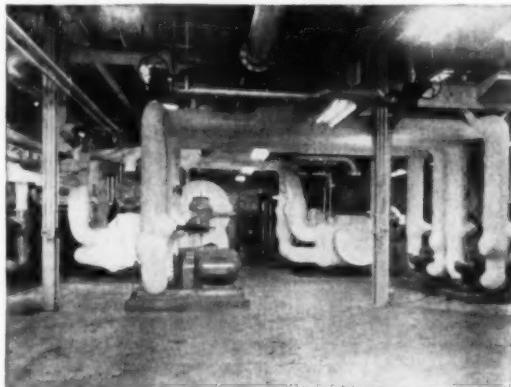
AIR COOLING

Certain food processes and food-storage requirements demand a controlled temperature the year round. By controlling the temperature and the humidity of the storage rooms, products are preserved and standardized for process. Control in the process rooms assures uniformity of product. Control in packaging rooms makes certain that the product will go to the consumer protected for edibility, palatability and salability.

Tonnage of refrigeration required will depend on prevailing weather conditions, nature of the product and method of processing, number of workers, type of structure and the number and kind of motors and machines in use within the manufacturing plant.

ZONING

For the food industries it is particularly important to control odors, as well as bacteria, humidity, and temperature. Some steps in processing are not compatible with others, air-wise. Some areas are only used 8 hours or 16 hours a day, while other spaces, including sensitive storage rooms, may require full-time regulation. It is, therefore, a more economical installation to group the related spaces. It may also be desirable to install a multiple-unit setup instead of central-station units, for full operating flexibility and economy.



Double centrifugal, "Freon"-charged air conditioning installation in large midwest candy manufacturing plant.

Of course, the food industry is of such proportions that, at best, only a few of the more important highlights relating to its use of air conditioning and refrigeration can be included in this paper by Mr. Reynolds.

However, as will be seen from the foregoing, air conditioning and refrigeration are of major importance throughout the food field. And installations in the most modern food processing and packaging plants are charged with "Freon" refrigerants.

There is good reason for this. "Freon" refrigerants are safe . . . nonflammable, nonexplosive, virtually nontoxic, and their purity further insures long, efficient, trouble-free and economical operation of the equipment. Whether or not your current commission is concerned with the food industry, your consulting engineer will enthusiastically suggest suitable "Freon"-operated machines to fully meet your client's needs. There are many dependable, well-known makes available, and you, in turn, may be sure that they will render highly satisfactory service. "Freon" refrigerants also comply with all building code requirements. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



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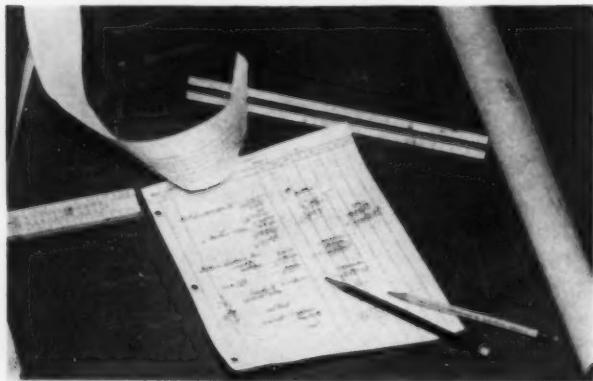
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1 Contact a Professional manufacturer of laboratory equipment while plans are still at the preliminary stage. Let an experienced representative of this firm contribute to the solution of your problem knowledge gained through years of laboratory planning.



2 Prepare separate specifications covering laboratory equipment, or have these made a separate section of the general construction specifications. This permits Professional manufacturers to consider those portions of the job they are especially equipped to produce.

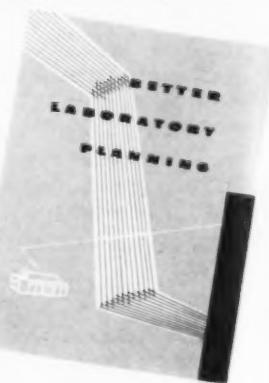


3 Secure direct bids from Professional manufacturers to the owners, or, when indicated, to the general contractor. In this way you receive the full benefits of specialized manufacturing facilities, volume production of standard components and thoroughly trained installation personnel. 1, 2, 3—that's all there is to it!

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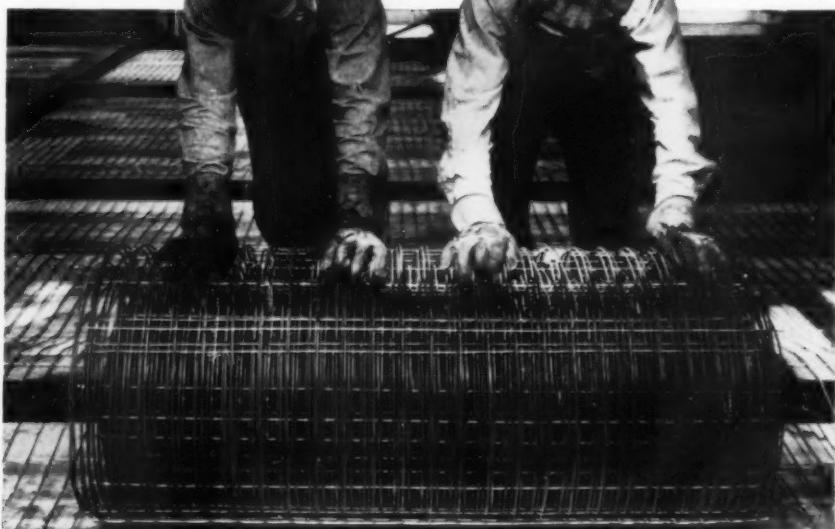
reinforcing members in the concrete slab.

When you use American Welded Wire Fabric for reinforced concrete walls, you can use 28% less steel area than with ordinary reinforcing materials. You just don't have to buy so much steel to do your job. This specification is partly due to the high strength of American Welded Wire Fabric, and to its efficient bond provided by small high strength members closely spaced and by the positive anchorage provided by the cross wires rigidly welded to the longitudinal wires.

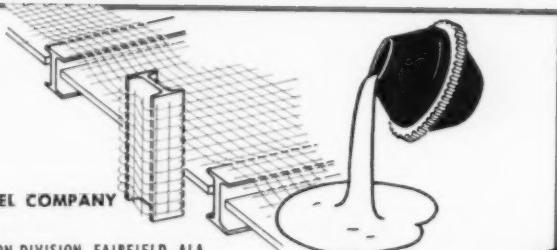
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Welded Wire Fabric is a prefabricated reinforcing material that is easy to install. Labor costs for placing will go down drastically. As a matter of fact, installation is so easy that there's simply no comparison with other materials.

Many standard designs and sizes are now available from jobbers' and dealers' stocks as well as prompt mill shipments to identified projects. Present CMP Regulations assure adequate warehouse stock of Welded Wire Fabric. If you would like further information, or literature, just drop a line to our nearest sales office.



This sketch shows where American Welded Wire Fabric is used in modern concrete buildings. It reinforces walls, floors and roofs, can be draped over beams and girders and wrapped around pillars. Many uses of concrete in irregular structural shapes are made practical by American Welded Wire Fabric reinforcement.

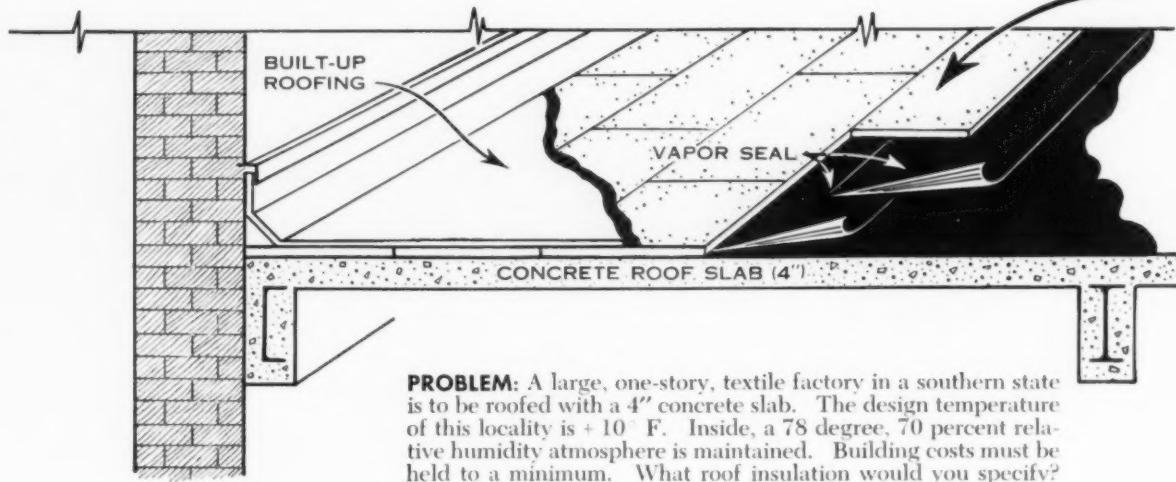


Every type of concrete construction needs

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UNITED STATES STEEL

How would you insulate this roof?



PROBLEM: A large, one-story, textile factory in a southern state is to be roofed with a 4" concrete slab. The design temperature of this locality is + 10° F. Inside, a 78 degree, 70 percent relative humidity atmosphere is maintained. Building costs must be held to a minimum. What roof insulation would you specify?

SOLUTION: Economy, insulating efficiency, and extra resistance to moisture in the case of this high-humidity textile plant are the chief factors to consider. Armstrong's Asphalt-Impregnated Temlok® is the standard choice of many architects for such a job. A 1" thickness of this material used over a vapor seal prevents condensation and provides the roof with the best of low-cost, efficient insulation. High resistance to moisture makes this type of Temlok especially practical for textile mills, laundries, and other buildings where humidity creates problems and where low cost is important.

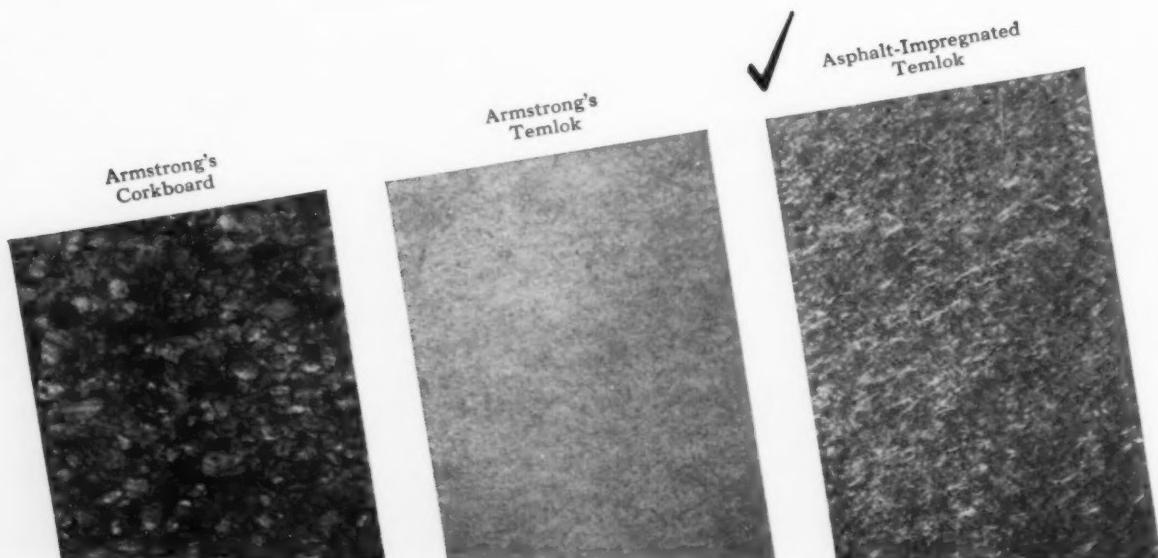
Asphalt-Impregnated Temlok is a sturdy, pine fiberboard, impregnated with a special asphaltic compound. Each individual fiber is coated to provide a waterproofing seal. This asphalt impregnation also gives it many advantages over other fiberboards, including greater edge and transverse strength. This

extra strength helps reduce breakage during handling and cuts down waste. During installation, hot asphalt or pitch bonds securely with the firm surface of the Asphalt-Impregnated Temlok, yet very little is absorbed by the board.

There are Armstrong roof insulations to meet all requirements. Where service conditions are exceptionally demanding, you may want to specify Armstrong's Corkboard Roof Insulation. For normal, low-budget jobs, Armstrong's Temlok is the ideal material. For full details, call your nearest Armstrong office or write to Armstrong Cork Company, 2412 Concord Street, Lancaster, Pennsylvania.



ARMSTRONG'S ROOF INSULATIONS

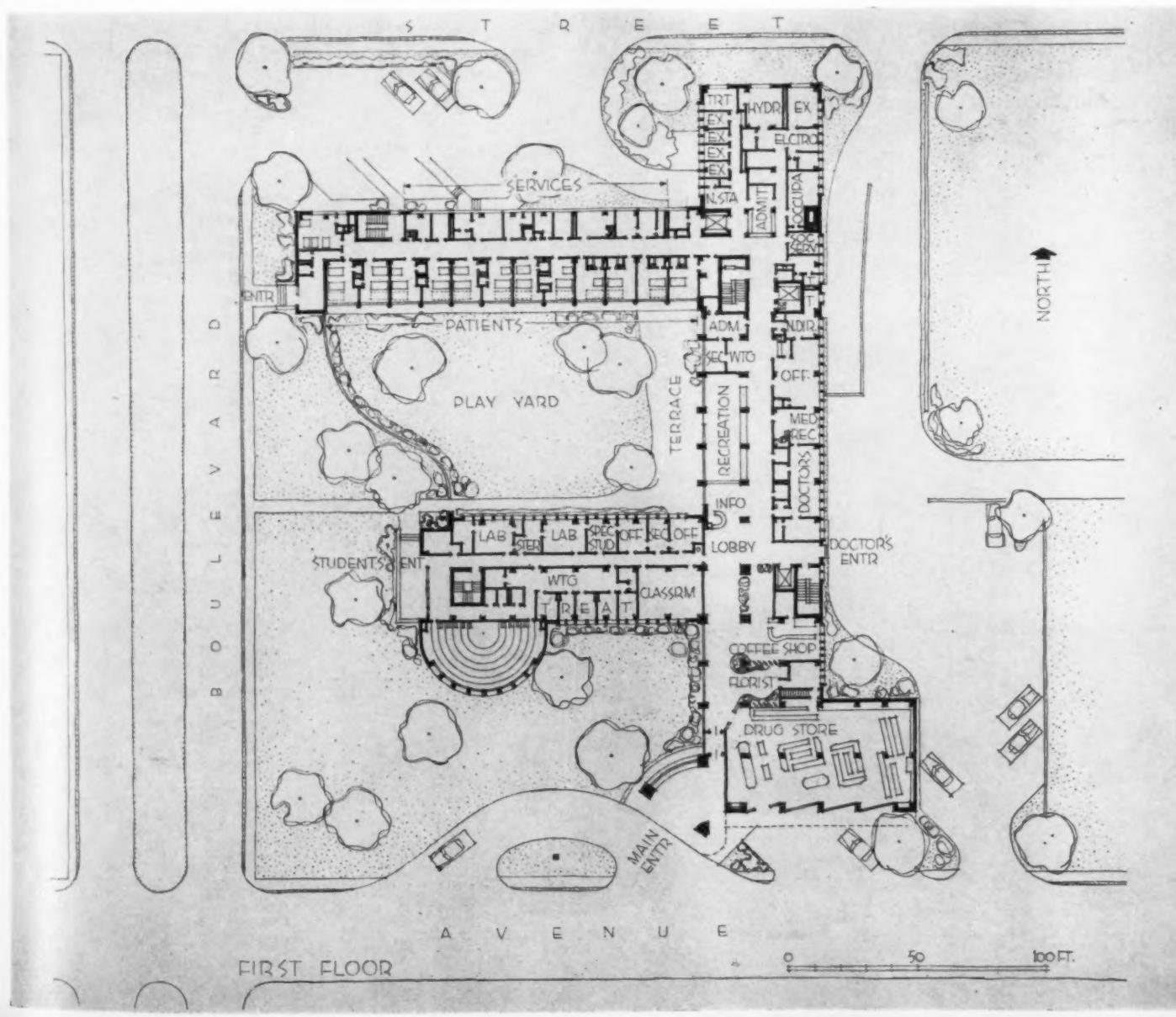




Le BONHEUR CHILDREN'S HOSPITAL

Memphis, Tenn.

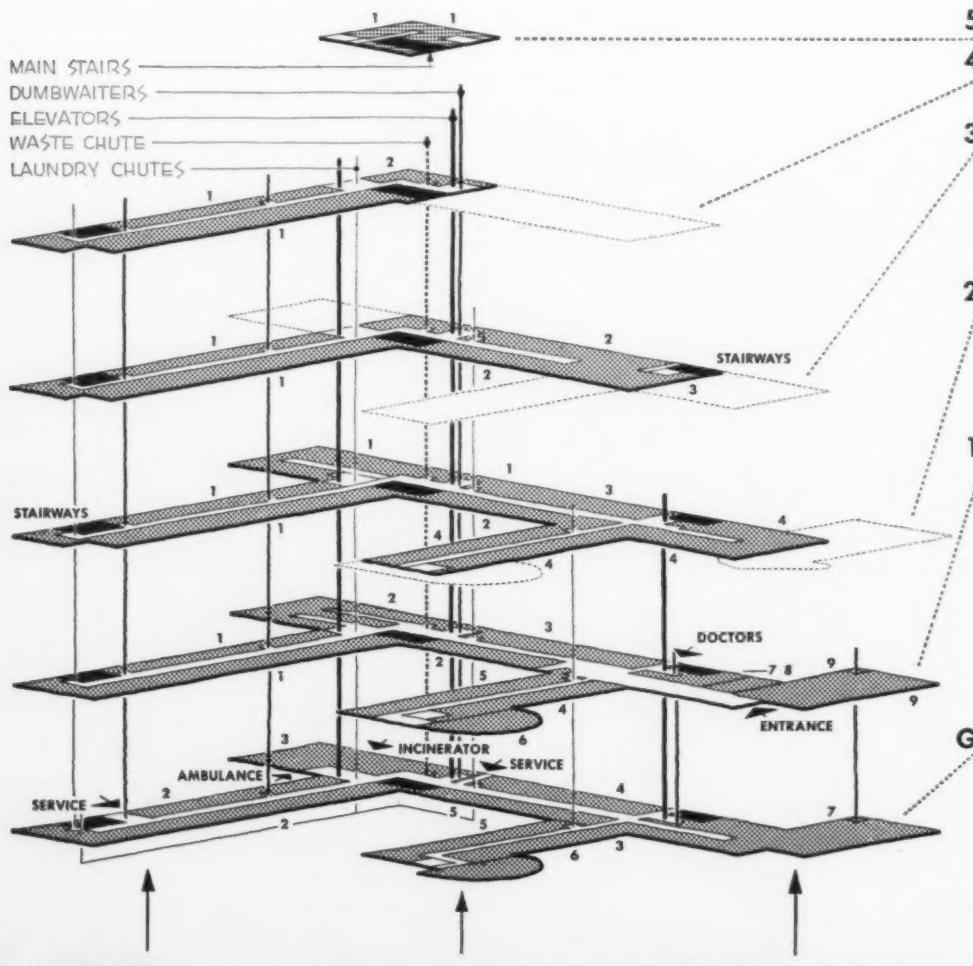
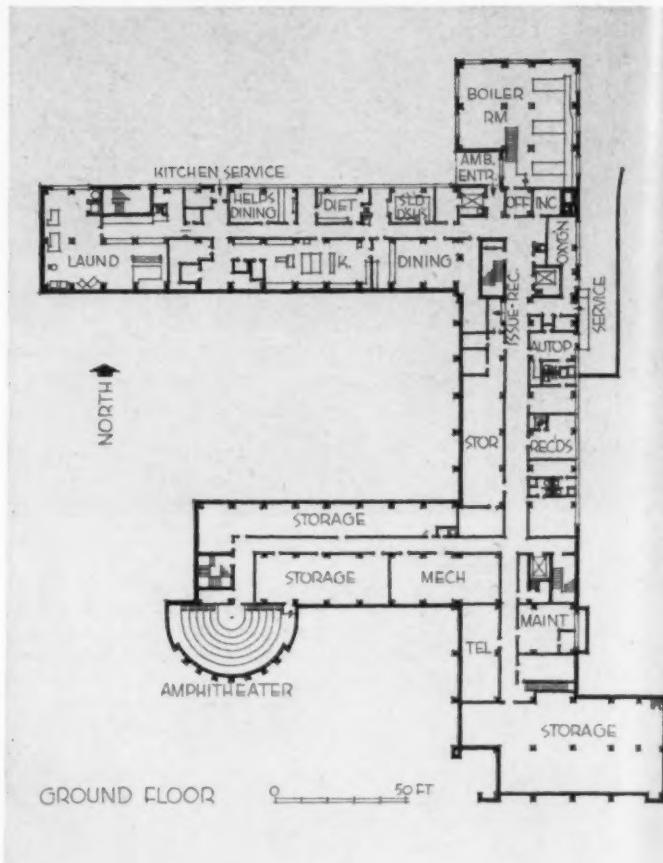
J. Frazer Smith & Associates, Architects & Engineers



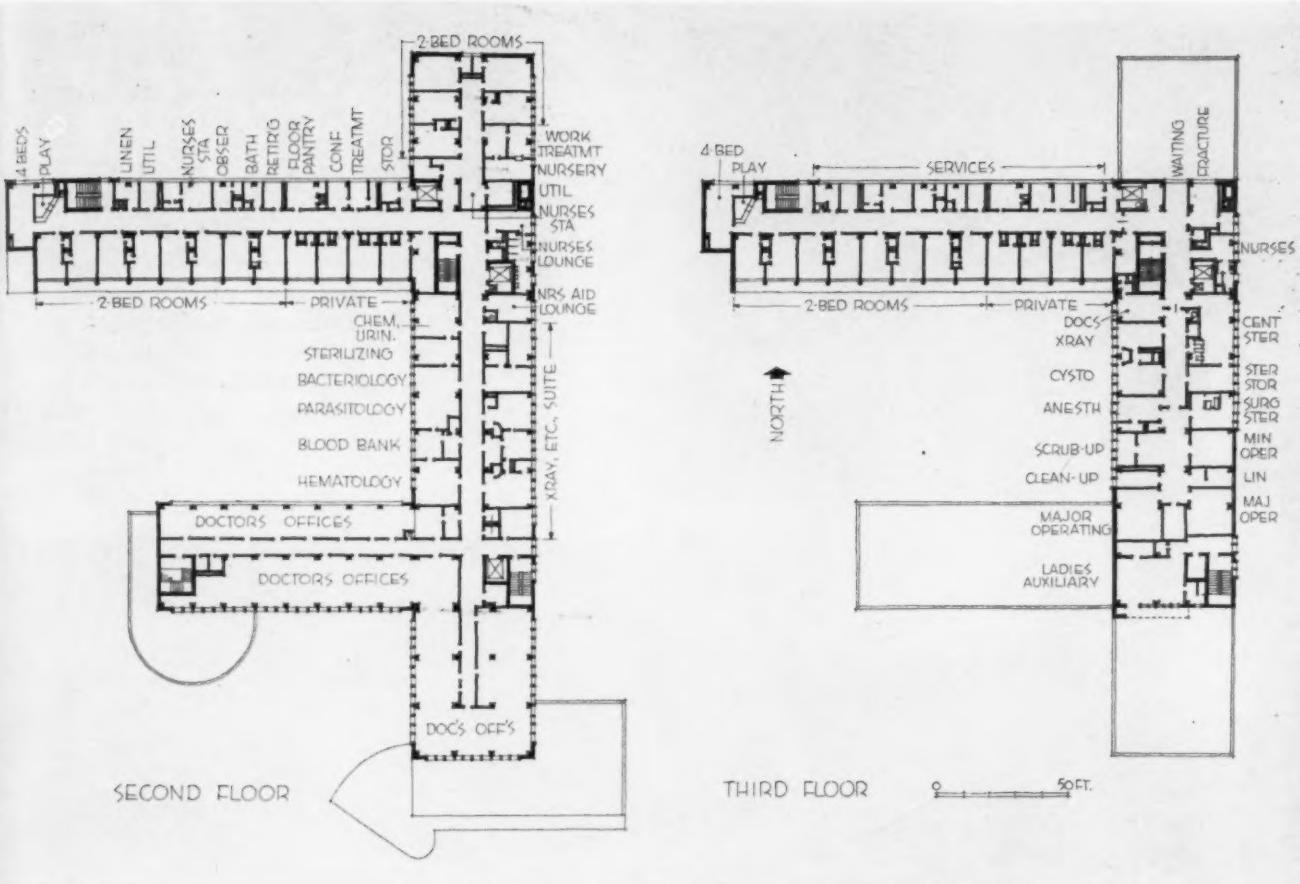
CHILDREN'S HOSPITAL

LE BONHEUR CHILDREN'S HOSPITAL in Memphis is in many respects unique. It is a general hospital for children, designed for a philosophy of nursing which requires the continued presence of a member of the patient's family. It is designed to reassure, not to awe, children; not just as a humanitarian measure but also because a pleasant atmosphere, more residential than commercially medical and more comprehensible to youngsters, is believed to have positive psychological and therapeutic value. This means liberal use of gay—but not garish—color; sanitary fabric wall coverings; draperies at the large expanses of insulating double glass; and planning to minimize in every respect the frightening aspects of the hospital.

Programming was done in consultation with representatives of the Memphis Pediatric Society, University of Tennessee College of Medicine, Memphis Hospital Association, Le Bonheur (a charitable organization and prime mover in establishing the hospital) Board of Directors, Crippled Children's Hospital, Tennessee Dept. of Public Health and U. S. Public Health Service. With the program set, the architects and medical consultants visited other children's hospitals and accumulated information from all over North America and parts of Europe. Sharing responsi-



DEPARTMENT	AREA
1. STAFF RESIDENTS circulation	1,090 422
NURSING DEPARTMENT	
1. patient areas circulation	4,549 2,457
2. STAFF RESIDENTS	700
NURSING DEPARTMENT	
1. patient areas circulation	4,549 1,574
SURGICAL DEPARTMENT	
2. surgical circulation	4,208 1,143
ADMINISTRATION DEPT.	
3. meeting room circulation	1,150 313
NURSING DEPARTMENT	
1. patient & nurses areas circulation	7,364 2,527
ADJUNCT FACILITIES	
2. pathology	1,700
3. radiology & fluoroscopy circulation	1,238 697
4. DOCTORS' OFFICES circulation	5,921 1,776
NURSING DEPARTMENT	
1. patient areas circulation	5,113 1,774
ADJUNCT FACILITIES	
2. therapy circulation	2,088 200
3. ADMINISTRATION DEPT. circulation	5,007 2,017
EDUCATION & RESEARCH	
4. clinic & classrooms	2,300
5. laboratories	1,477
6. amphitheater circulation	1,215 718
COMMERCIAL FACILITIES	
7. coffee shop	970
8. flower shop	510
9. drug store	2,740
SERVICE DEPARTMENT	
1. housekeeping	1,852
2. dietary facilities	3,753
3. mechanical facilities	4,219
4. employees facilities	1,771
5. storage circulation	5,755 2,819
EDUCATION & RESEARCH	
6. storage circulation	1,220 504
COMMERCIAL FACILITIES	
7. storage (service dept.) total area	90,930 sq. ft.
GROSS CUBAGE	1,057,052 cu. ft.



Below: left, part of the nursing wing; center, connecting block houses administrative areas and recreation room on first floor, laboratories and operating suites above; right, education and research with doctors' offices on floor above



Joseph W. Mallor



CHILDREN'S HOSPITAL

Left, public entrance. From this one passes the commercial facilities (drug store, florist, coffee shop shown at top of facing page) and Le Bonheur charity headquarters, from which the children's lobby (below) opens invitingly. Child patients are encouraged to play here; in fact it is called the Department of Recreational Therapy. Pleasantly



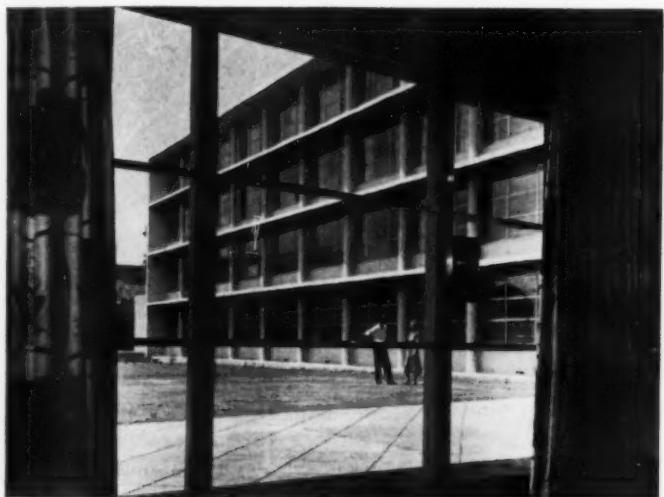
bility for design and construction were: Zeno L. Yeates, associate architect; S. L. Burns, Jr., associate engineer; Robert F. Elliott, landscape architect; William B. Bekemeyer, equipment; Harmon Construction Co., general contractors. Started in July 1950 and opened June 15, 1952, the building cost slightly over \$2,100,000 including landscaping, fees, equipment, etc.; or \$23.23 per sq ft.

Le Bonheur has 128 beds of which 16 are bassinets, 16 incubators; the remainder are cribs or beds. There are laboratories for research and teaching facilities, commercial spaces to help sustain the building financially and offices for private pediatricians (who have full access to hospital facilities). Quarters are provided

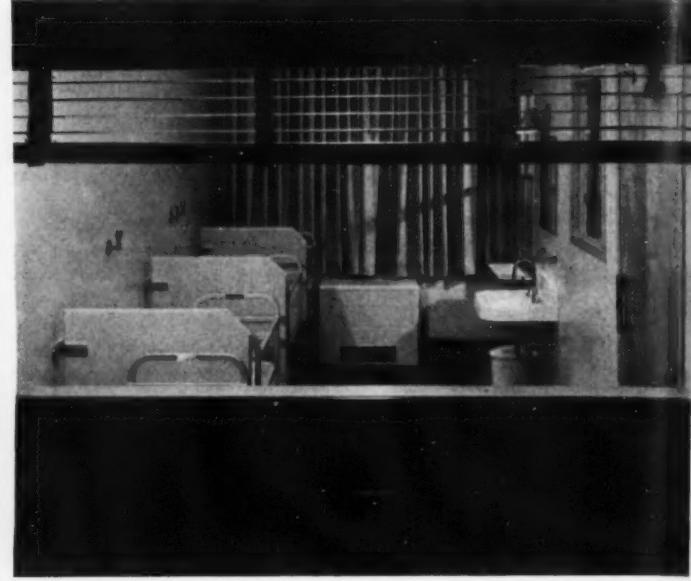
for resident doctors and interns; circulation of people and things has been carefully laid out (corridors, three elevators, five dumbwaiters) to solve traffic problems of personnel, supply, visitors, etc. In addition to all this, the plan and program are integrated with the city's hospital and health center — the site, donated by the city, is surrounded by other components of the center — and with the state's hospital facilities plan.

All patients' rooms were required to have southern exposure. An eight-story, 400-bed hospital across the avenue might have blocked southern sun. Hence the nursing wing is at the north side of the site, overlooking a wide, well-protected lawn and paved terrace on which children are encouraged to play. From the window-wall

gay color, comfortable furniture and children's books, plus the impression of children enjoying themselves, reassures entering children. Through wide windows the play terrace and grassed court are visible. At rear is the admitting desk, convenient to outpatient, emergency and nursing units yet isolated for efficiency.



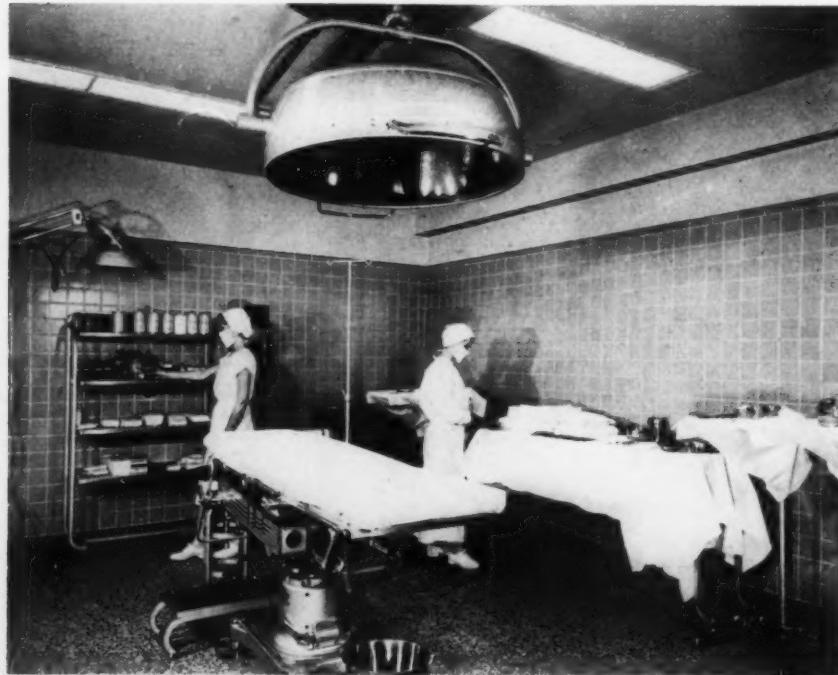
CHILDREN'S HOSPITAL



of a patient's room, activity in this pleasant court can be watched as if from a theater balcony.

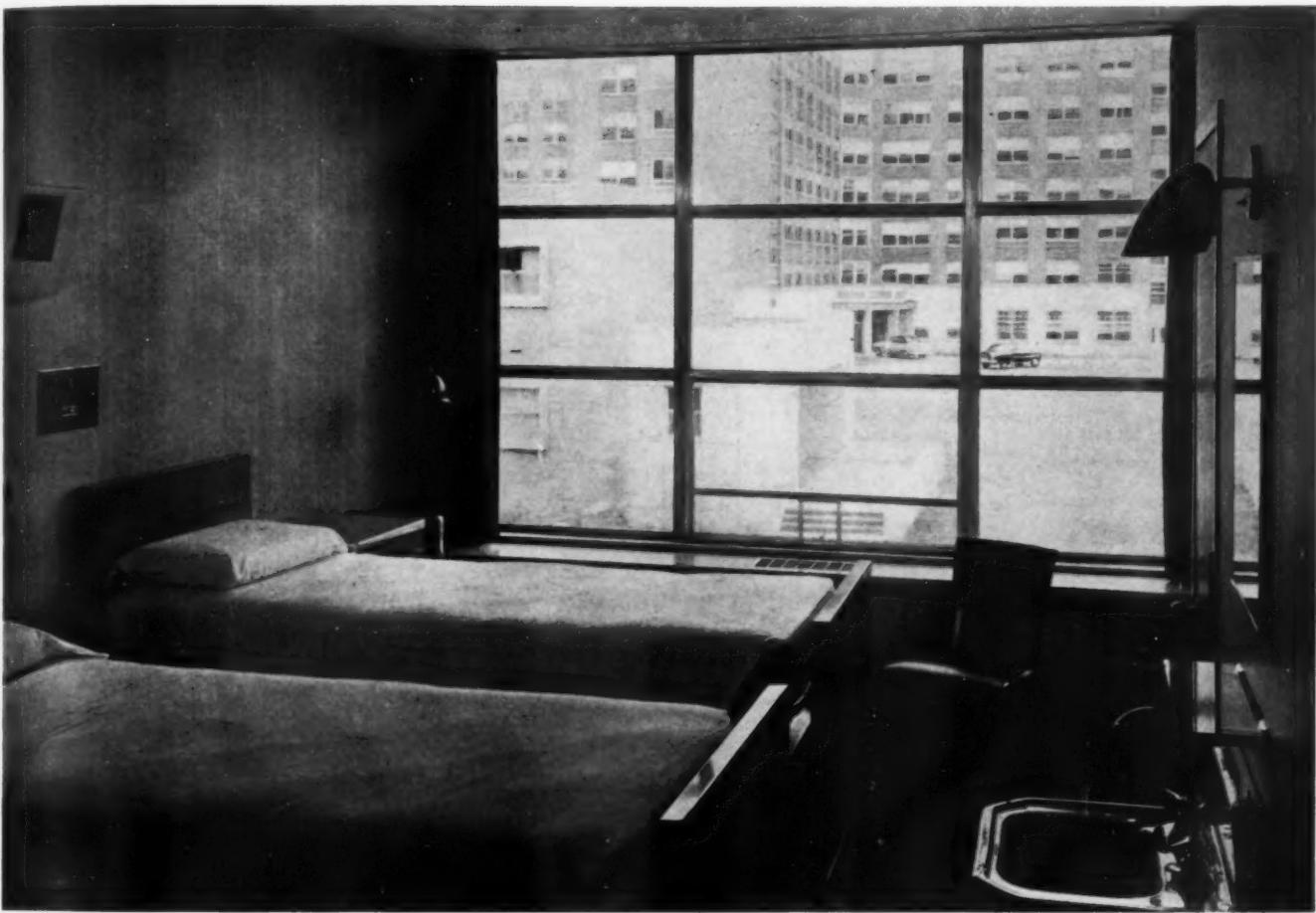
Construction is reinforced concrete frame with 6-in. slab floors. The exterior is architectural concrete with an "aggregate-transfer" finish obtained by securing selected aggregate to forms with a water-soluble adhesive; when forms are removed, the exposed aggregate is polished much like terrazzo. A warm buff brick is also used. Interiors have acoustical ceiling treatment; floors are asphalt tile generally with linoleum tile in administrative areas, quarry tile in dietary portions, concrete in service areas and conductive terrazzo in surgical

suites. Partitions, as far as possible, are "dry-wall" construction with asbestos or gypsum board surfacing; some gypsum plaster is used. Except for ground-floor service areas, the entire building is air conditioned, with an independent system for the surgical suite. Oxygen is piped to all nursing rooms and surgical areas, which also have suction outlets. A pneumatic tube system extends throughout the hospital. The low-voltage electrical systems include nurses' call, nurse-patient communication, paging, master clock, fire alarm and provisions for sending recorded music or programs to each nursing room.

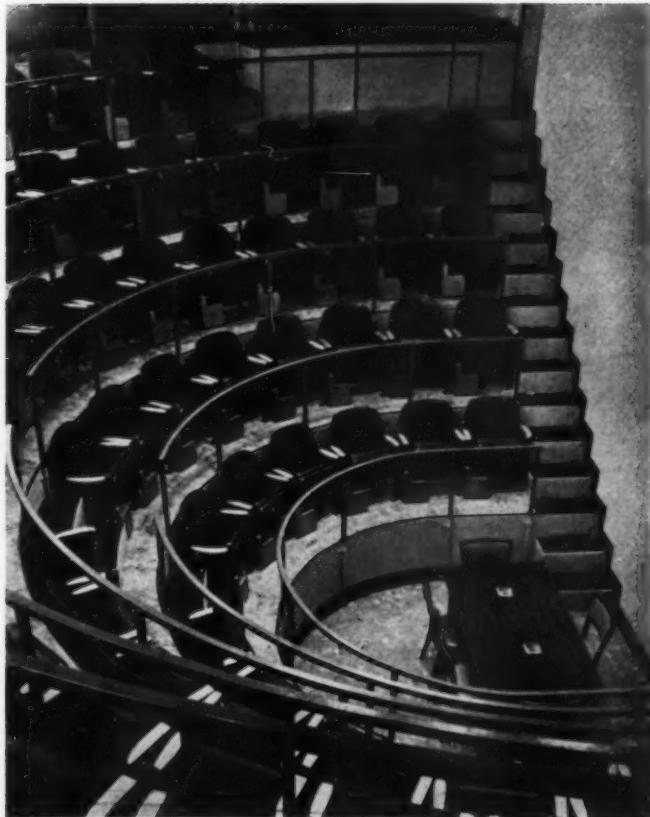


Left, operating room; left on facing page, bacteriology and parasitology laboratory, looking toward blood bank. Far right, amphitheater in education and research wing

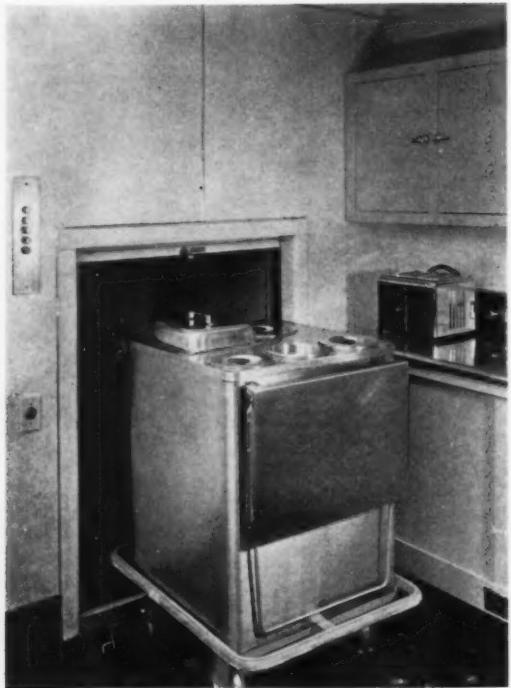
Across top of both pages are shown nursing facilities. Far left, typical corridor; left, a nursery (on fourth floor); below, typical room. All patient nursing rooms have one bed for a child, one for a parent, with private toilets and laboratories; all details are arranged to include parents



Joseph W. Molitor

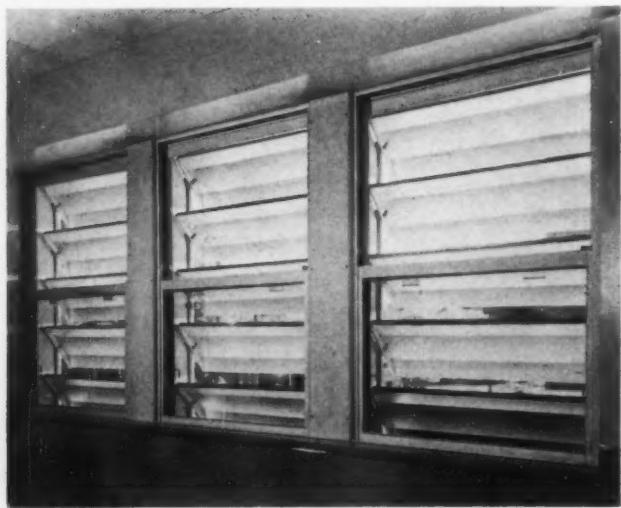


CILDREN'S HOSPITAL

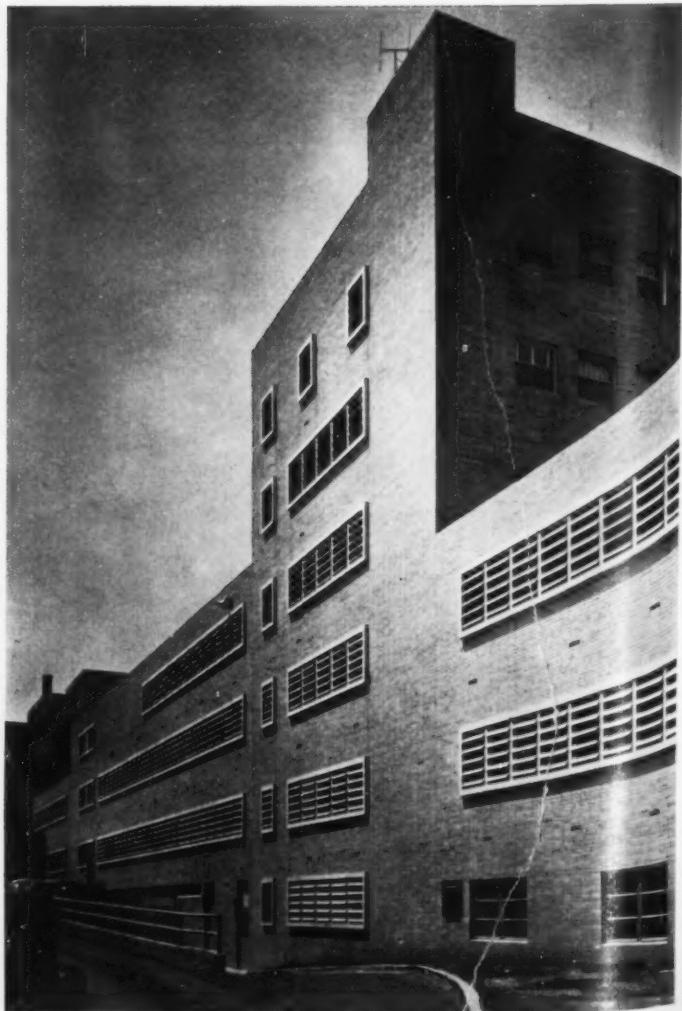


Joseph W. Molitor

Food for regular and special diets is prepared in central kitchens (above, right) and delivered to floor pantries in electrically heated stainless steel carts via one of five dumbwaiters. Thus food service does not cross circulation of people through the building



All windows facing south or west are shaded against strong sun by concrete overhangs or adjustable aluminum louvers. Hospital is completely air conditioned; keeping summer sun off glass has both reduced air conditioning installation cost 60 per cent and lowered operating cost





Concrete is used in many ways in Center design: tilt-up exterior panels, cast-in-place columns, precast seat tiers, lightweight insulating panels. Dome frame is structural steel



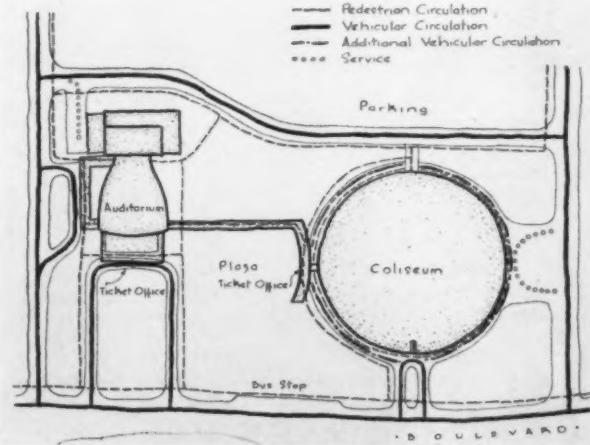
STRUCTURAL FORMS KEYNOTE CIVIC CENTER

THE SIMPLE EXPRESSION of structural forms in these two structures — an auditorium and a gymnasium for a new Civic Center in Charlotte — has produced a quiet, positive character which readily identifies their purpose. An enormous number of preliminary studies and models of possible structural schemes were made by the architects and engineers to arrive at final designs which would combine economy of construction and maintenance, flexibility and ease of circulation. At the same time it was desired to stress both apparent and real safety, and give a pleasing appearance suited to the spectacles the buildings will house. A few of these early studies, many of which were rejected because they looked unsafe, are shown on the next page. A third building eventually will connect the two units and will house exhibit and meeting rooms.

Charlotte, North Carolina

**A. G. Odell, Jr., and Associates, Architects
Severud-Elstad-Krueger, Consulting Engineers**

Sketch by Alan C. Hills



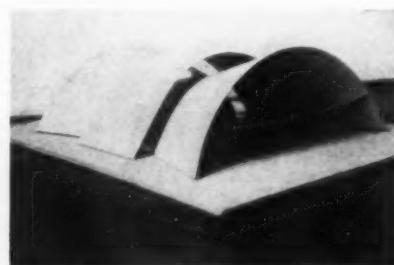
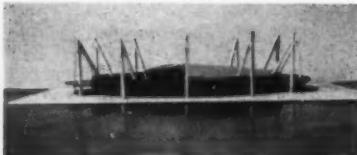
CHARLOTTE CIVIC CENTER

THE COLISEUM was planned to accommodate a variety of attractions, ranging from large athletic events, circuses, ice shows, horse shows and rodeos, to small exhibitions and conventions. There is also space at one end for a large stage for speeches and related events. Services have been located to give a large amount of open space to be used for exhibits, meetings, storage, additional dressing areas and other special uses. Overhead type doors are planned to partition off certain areas when needed. There are permanent seats for 10,000; portable seats for 3500 can be placed in the arena for such events as boxing matches. Large stairways are used to draw the spectators up to the second level concourse which surrounds the seating area. All aisles and passageways are designed to empty the building within four minutes.

The circular shape was chosen over a rectangular

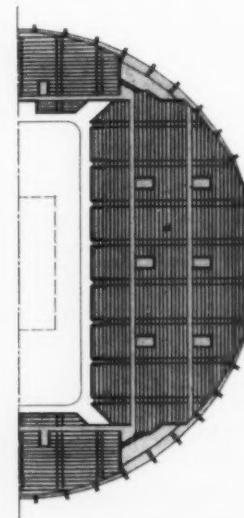
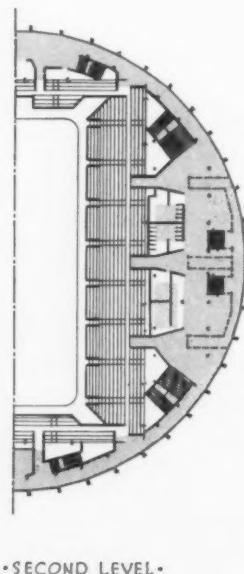
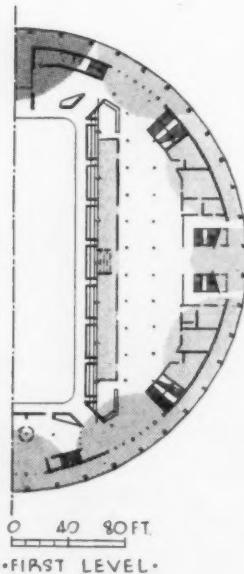
one for a variety of reasons: it gives a maximum square footage for the perimeter, a more economical roof structure, and places the greatest number of straight-section seats at the sides of the arena. All seating areas were planned as straight sections to facilitate use of economical precast seat beams throughout the building.

The structure will be supported by exposed concrete columns sloped inward from the top to give greater protection from the weather. These support a shallow steel dome surfaced with lightweight slabs of wood shavings and cement, covered with built-up roofing. The dome has a diameter of 332 ft. 4 in., one of the largest of its type. Precise mathematical methods were used to analyze its structure and stiff joints by assuming certain lines of symmetry to reduce the statically indeterminate factors.

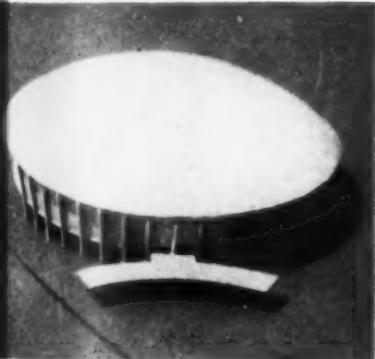
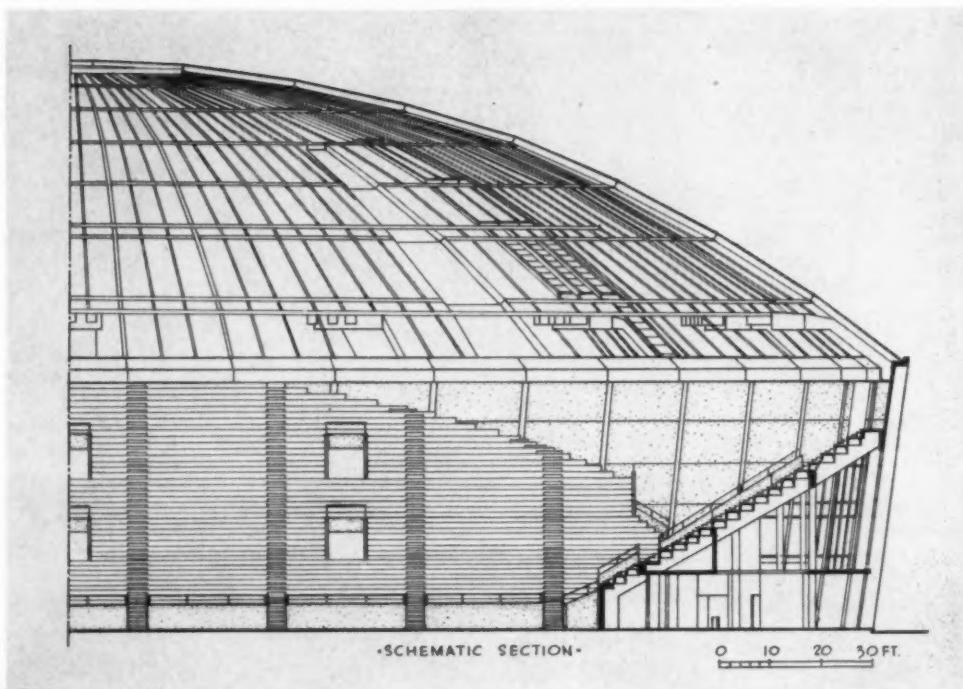


Various ideas were studied for the coliseum; a few are shown above. Of especial interest were studies for a catenary roof structure, with roof of chains hung from arches, and covered with steel mesh filled with concrete. Model at right approaches final

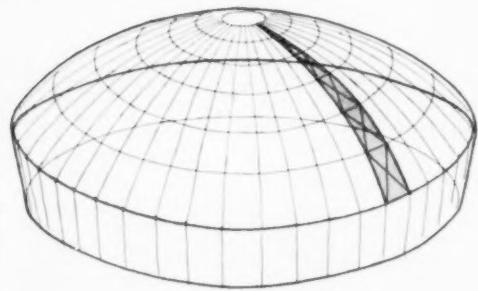
Services
Performers
Multi-use
Spectators



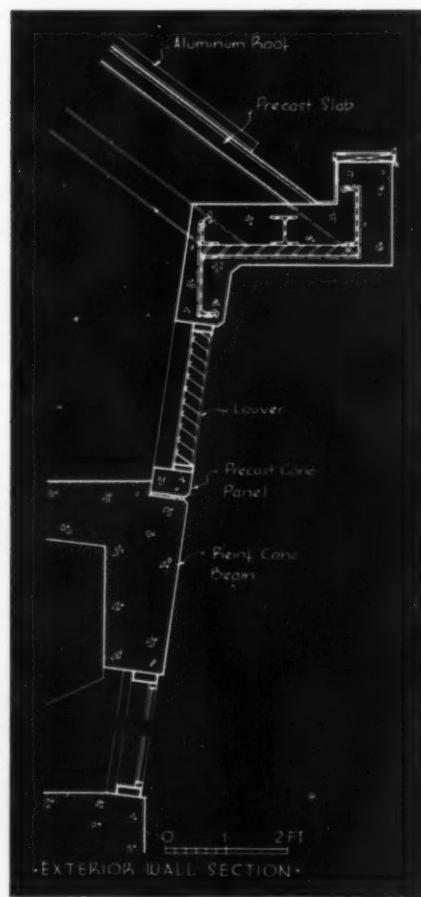
Sketches by Alan C. Hills



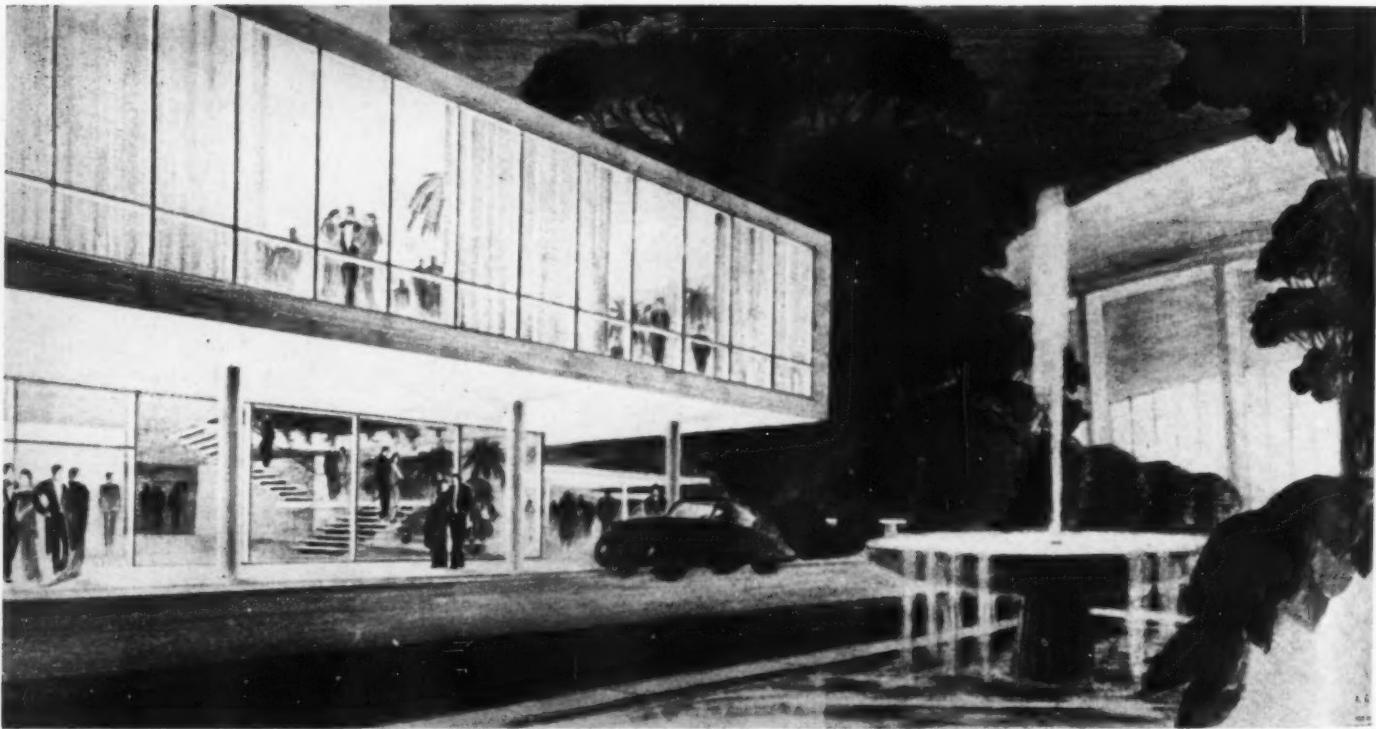
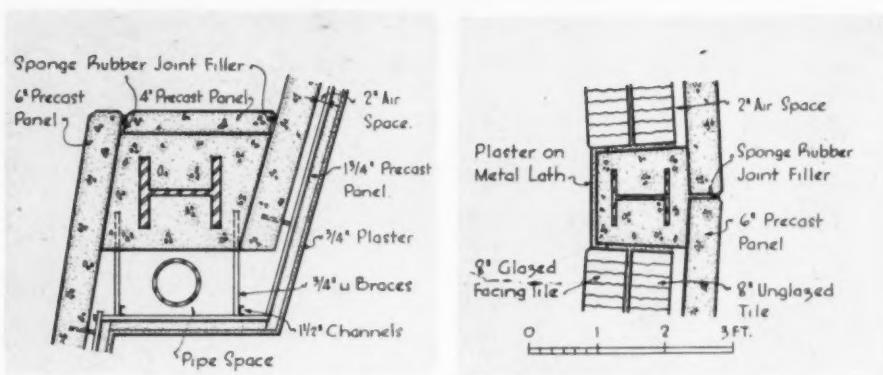
Sketch by Tom Ballenger



The dome structure (above) is made of WF steel ribs supported and braced by spliced welded rings. Diagonals (shaded area), filler beams and rails will support precast panels and built-up roofing



**CHARLOTTE
CIVIC CENTER**

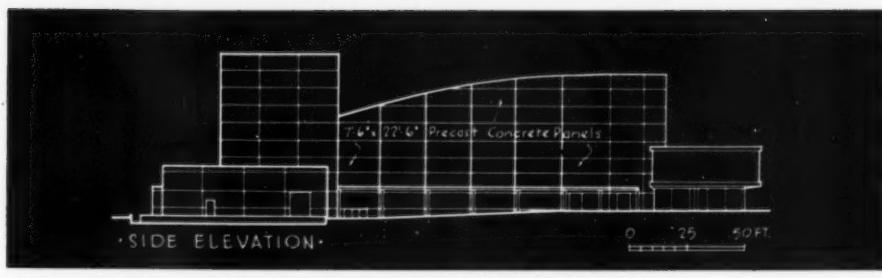


THE AUDITORIUM was planned for the presentation of plays, concerts, musical shows and other theater-type attractions. Studies were made to determine the optimum seating facilities for 2500 people, and the final shape of the building is the direct result of these studies. Roomy accommodations have been provided to meet the varied requirements of theatrical productions: a big stage area, large dressing and work areas, a brilliantly lighted lobby and a large semi-darkened lounge on the second floor. The lounge will have concession facilities for the convenience of the audience during intermissions. A covered walkway along the drive at

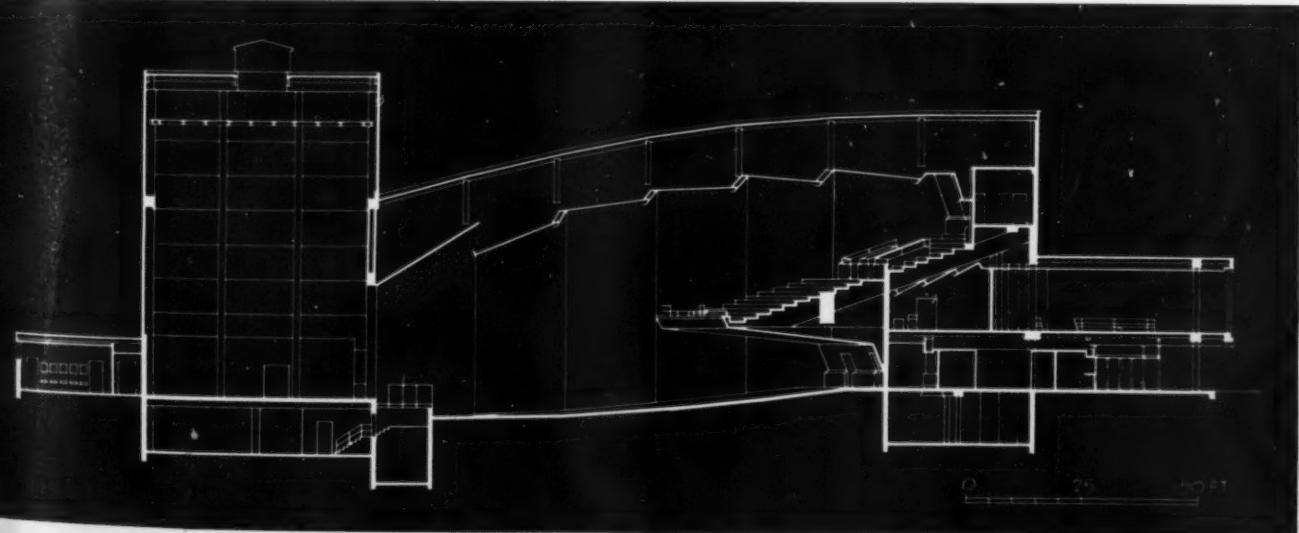
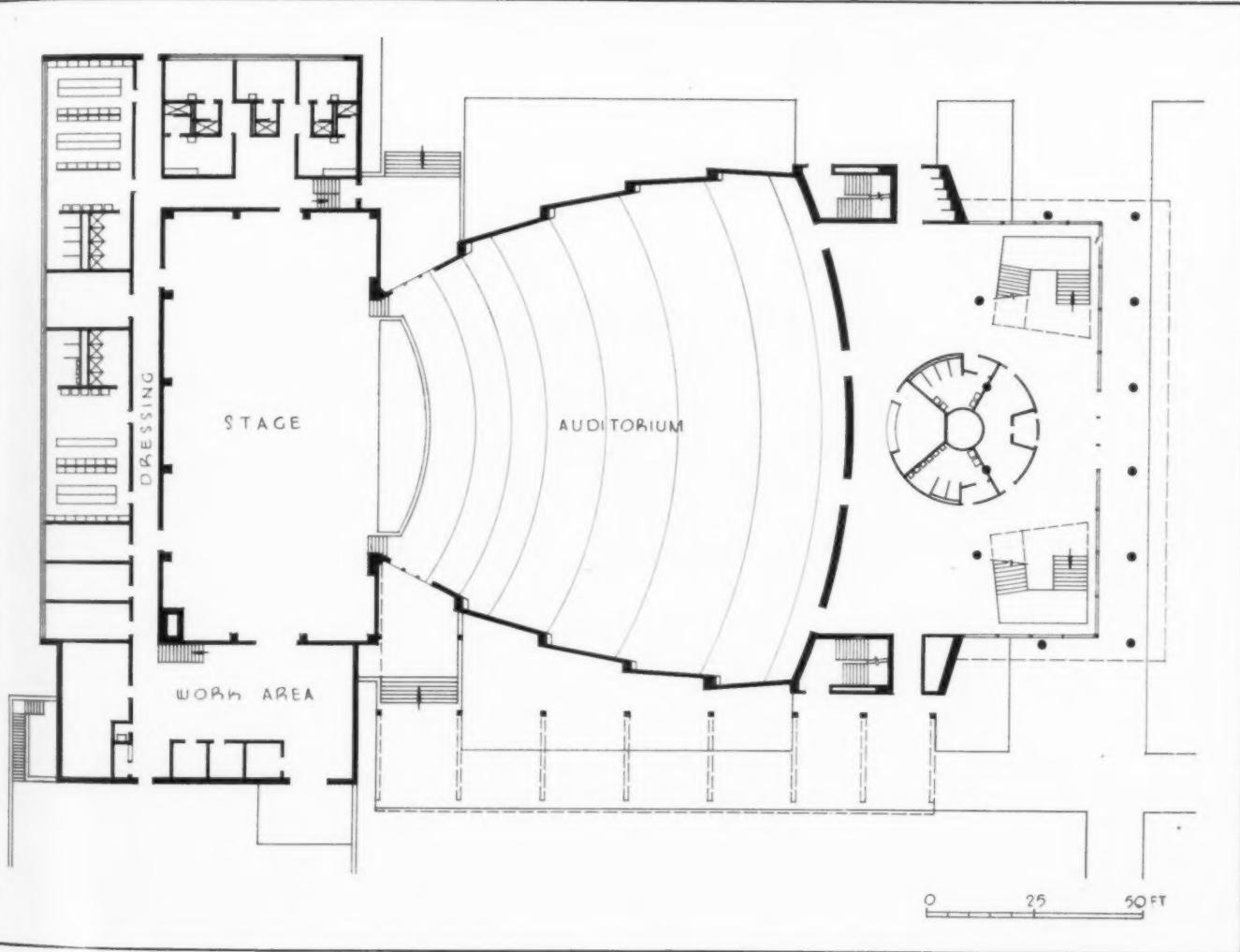
one side, and the overhang of the second-floor lounge will provide protection during inclement weather. As will also be the case in the coliseum, bright primary colors will be used to alleviate the large expanses of concrete.

The auditorium and coliseum were separated to reduce conflict between their respective noises and traffic. To prevent additional traffic loads on downtown Charlotte, a site with several good means of access was selected about 3 miles from the business district. Parking is provided on the site for 1500 to 2000 autos; it is connected to coliseum by a bridge.

The exterior of the auditorium is surfaced with precast tilt-up concrete panels. Details [left] show typical joints



Sketches by Alan C. Hills





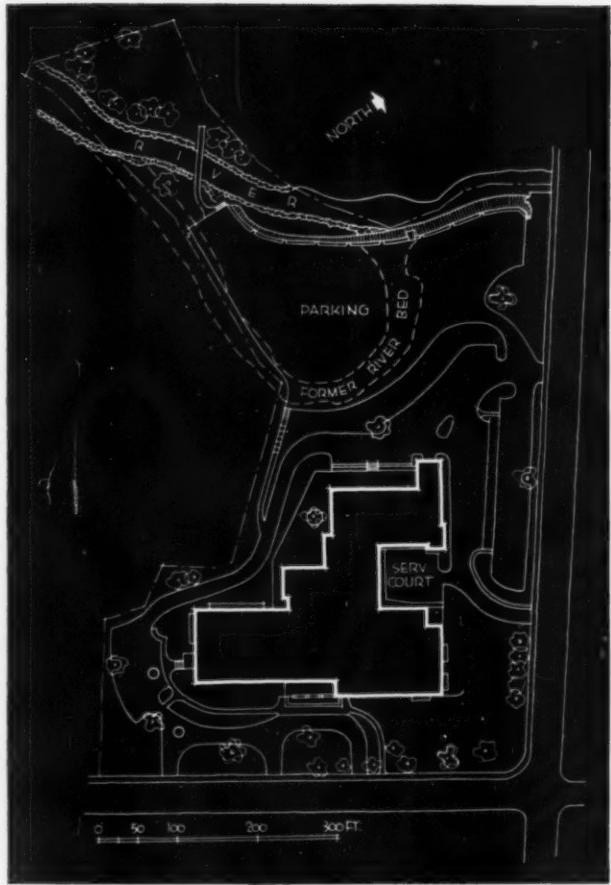
DESIGNED TO BE FUNCTIONAL IN PLAN

Home Office Building for Phoenix Insurance Co., Hartford, Conn.

Seelye, Stevenson & Value, Structural Engineers

*Meyer, Strong & Jones, Mechanical Engineers
A. F. Brinckerhoff, Landscape Architect*





PERHAPS it should be assumed that every important office building would be thoughtfully planned, functional to a high degree, beautiful and inspiring as may be. These are normal objectives. But this one, new home office building for a large insurance company, seems distinguished for the assiduous analysis of purposes, the detailed study of many factors frequently taken for granted. Naturally in a special-occupancy building these matters are possible of positive determination. But there was also a special reason here, in that the decision for a new building was not made without a long study of the company's old building, to check in detail its inadequacies, to set against these the specific possibilities of a fresh start.

For example, take space use in an insurance building. What is the basic space unit for large occupancy? Has it changed? How can units best be combined?

Or, what is the exact purpose of a window?

How exactly can a building contribute to better employee relations? How far to go? How evaluate good lighting, air conditioning, social and recreational facilities, a pleasant site or general "atmosphere"?

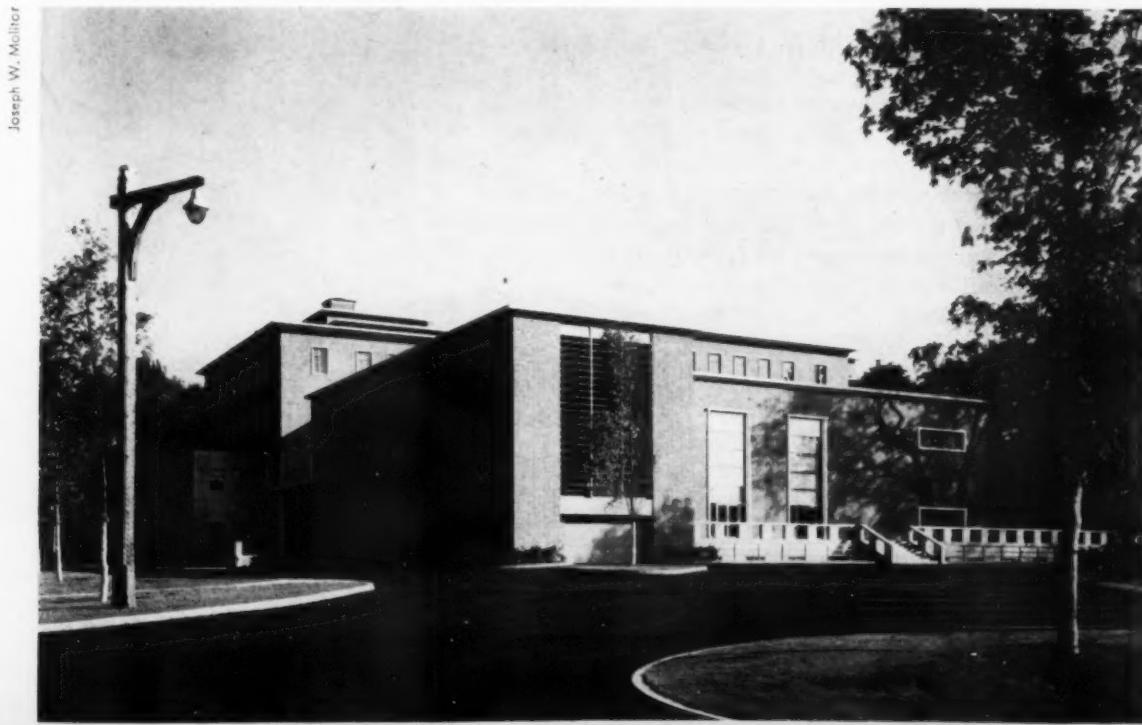
As to fenestration, a client group with the architects visited a great many buildings with widely different fenestration. The windows seen here, then, were a deliberate decision, specifically a vote against the strip window fad. Reasons cited were: cold areas near windows, windows found largely shielded by drapes, unbalanced light (especially in deep space as here contemplated), a sense of "special privilege" near windows. Windows — this is the group decision — should not be relied on for lighting, should give a normal sense of unconfined outlook, should not be glare spots, should not be designed for striking esthetic effect.

Recreational facilities for the use of the employees have been very liberally provided, again a firm determination, based on company policy.

QUIET IN EXPRESSION

R. B. O'Connor and W. H. Kilham, Jr., Architects

Teresa Kilham, Color Consultant



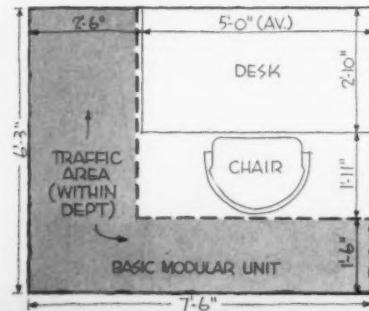
Joseph W. Muller

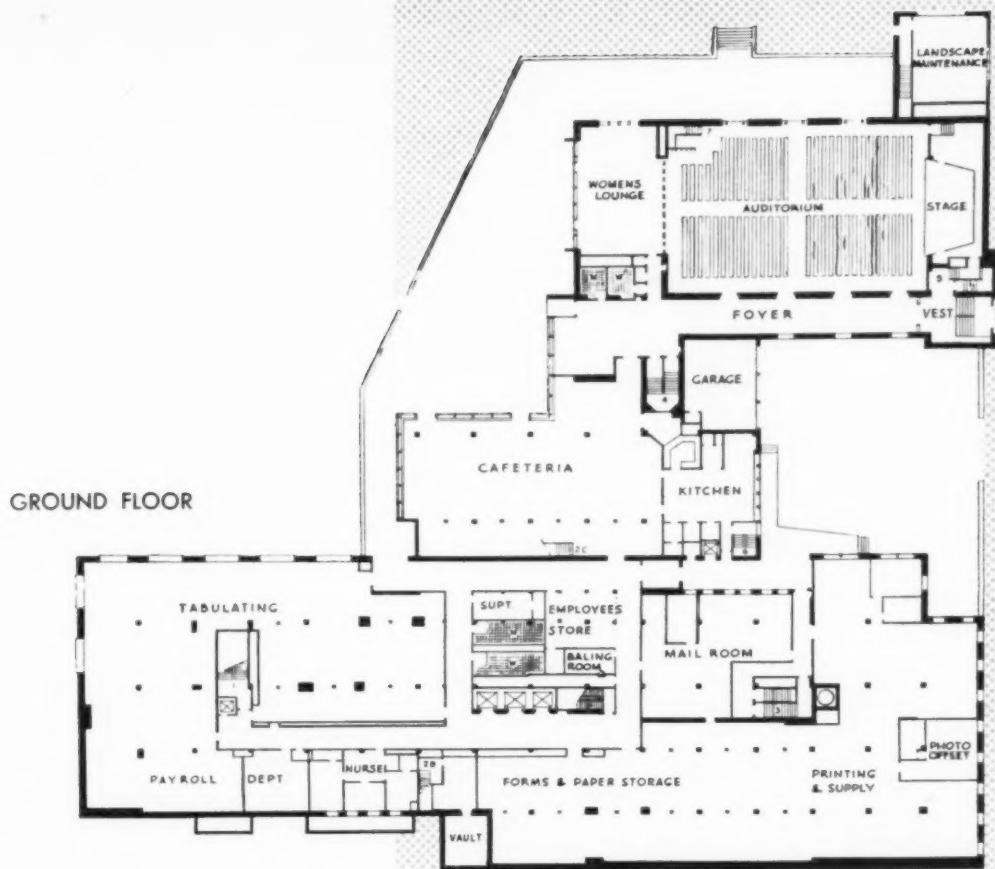


Joseph W. McIlroy

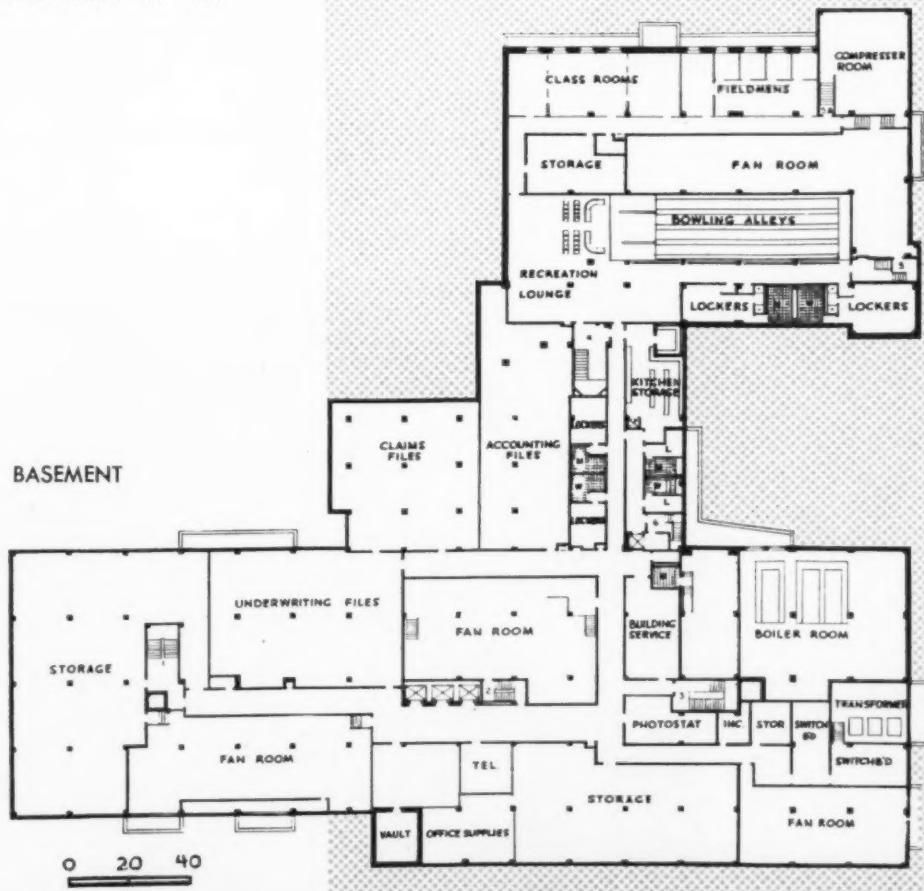
Space needs were the subject of much paper work. Total space requirements were questionnaire by departments, with expansion estimated for ten years ahead. It all sifted down to a space module, for a man at a large desk (34 by 60 in.), of 6 ft 3 in. by 7 ft 6 in. This was later increased to 6.6 by 7.8 to allow a bit more for passages and partitioning. This latter unit became the basis for column spacing, which is 46 ft by 19 ft 6 in. The architects say that this might be splitting hairs — maybe the shorter dimension should be an even 20 ft, to give a bit more freedom where, say, tile walls might tend to squeeze interiors an inch or so.

As for architectural esthetics, the decision was to be neither sentimentally old-hat nor doctrinaire modern, but to have the building fit pleasantly into a residential area of a New England city, with familiar materials and with reliance on good taste and good proportions.



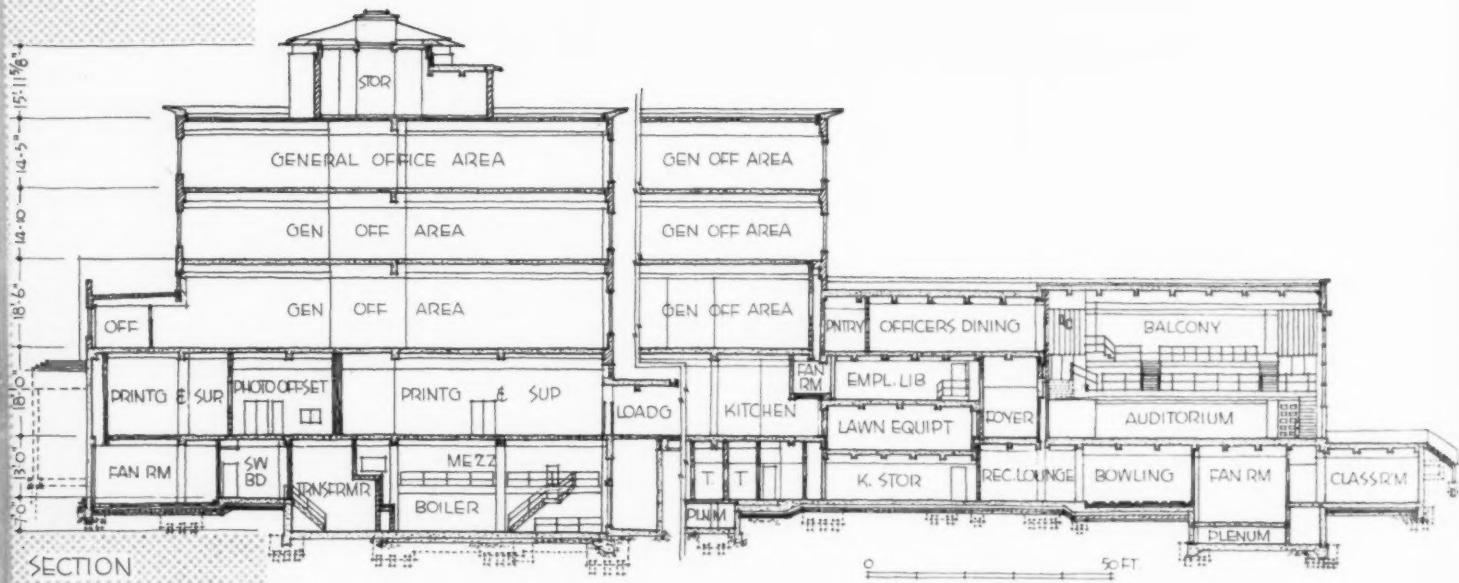


Ground floor is at ground level in rear only, due to slope of site. There are actually three levels below first floor

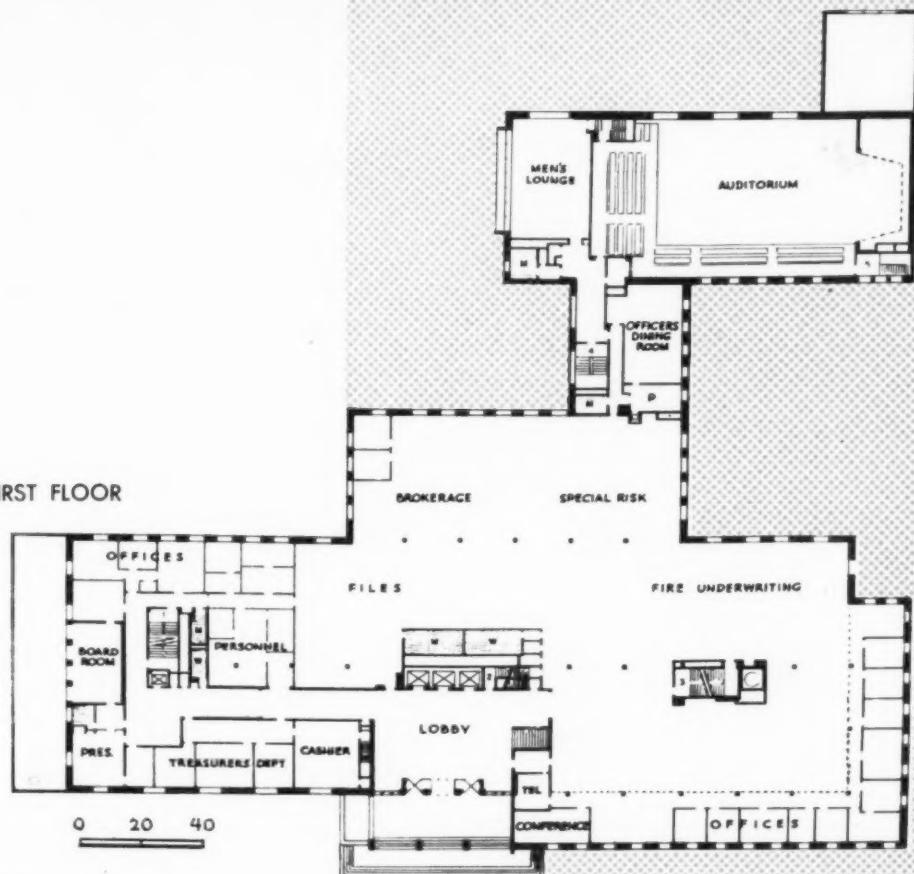




Joseph W. Molitor

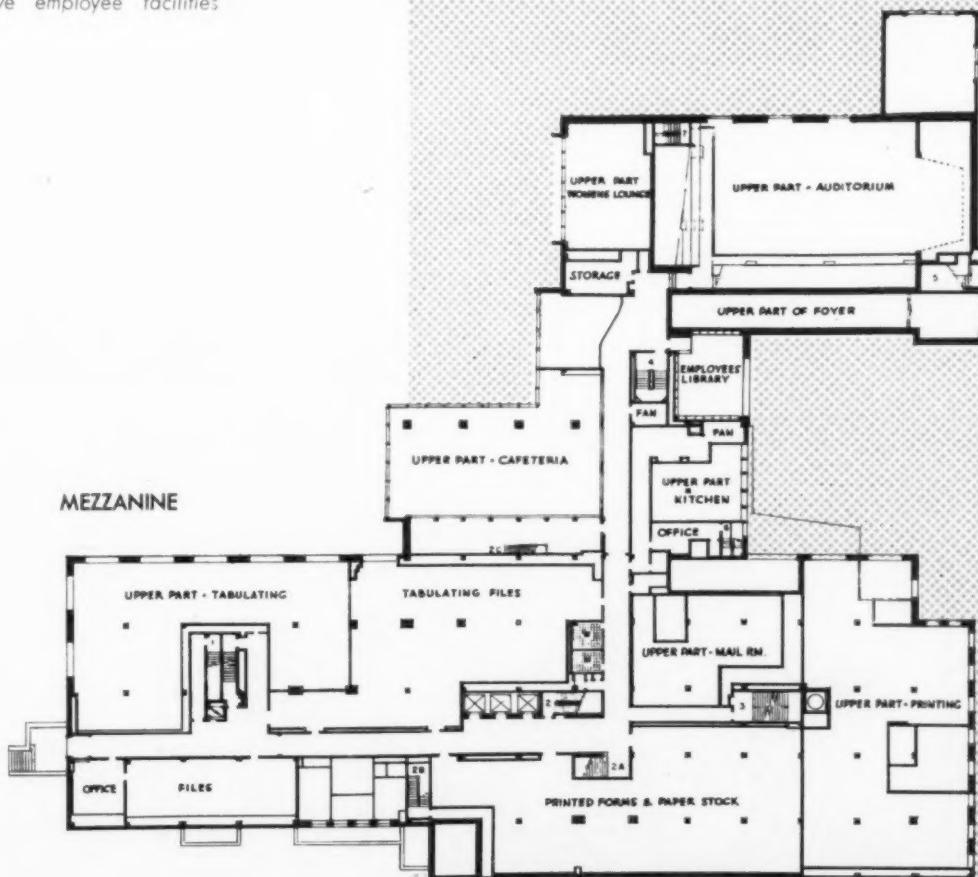


FIRST FLOOR



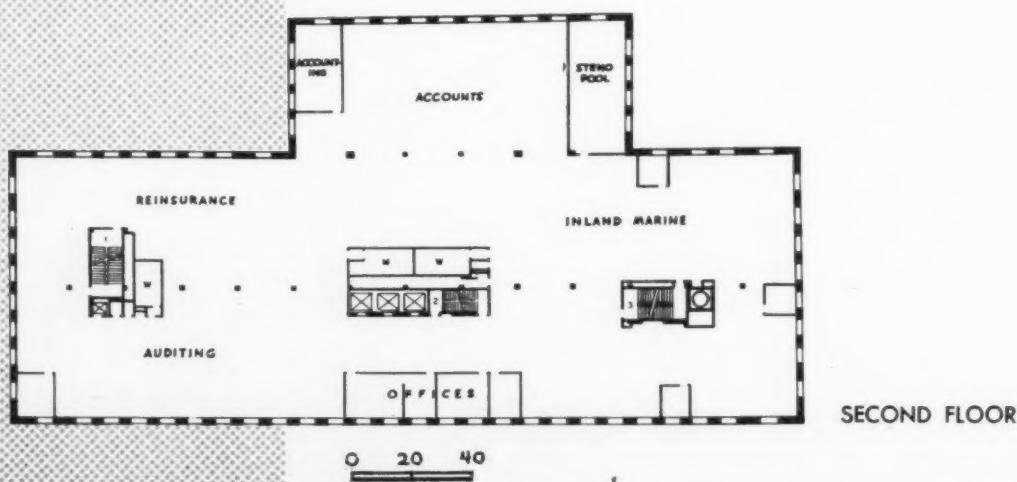
Mezzanine comes between ground floor and first. Lower floors are largely occupied by heavy operations, of which there are many like tabulating and printing, and for extensive employee facilities

MEZZANINE





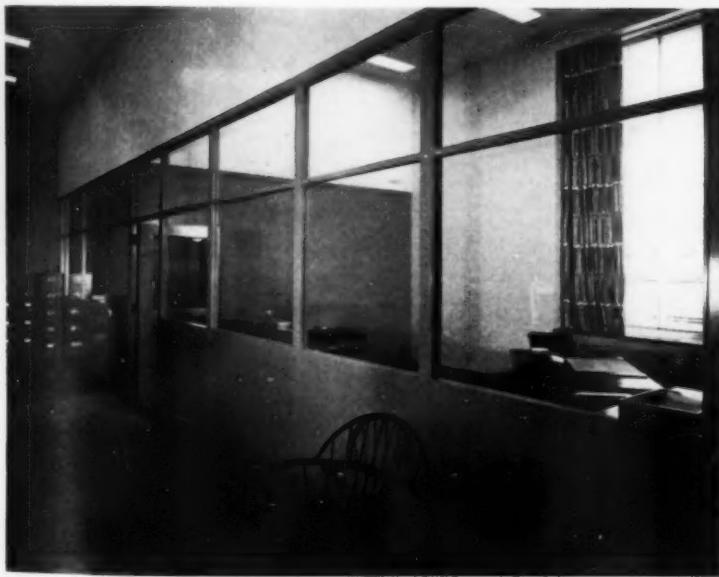
Second floor (and third) becomes the typical insurance company office space, mostly open with few partitioned offices. Lighting, acoustic treatment, air conditioning are important.



Joseph W. Molitor



Typical office partitioning is metal and glass, for flexibility. Only executive offices, above and below, have plastered partitions



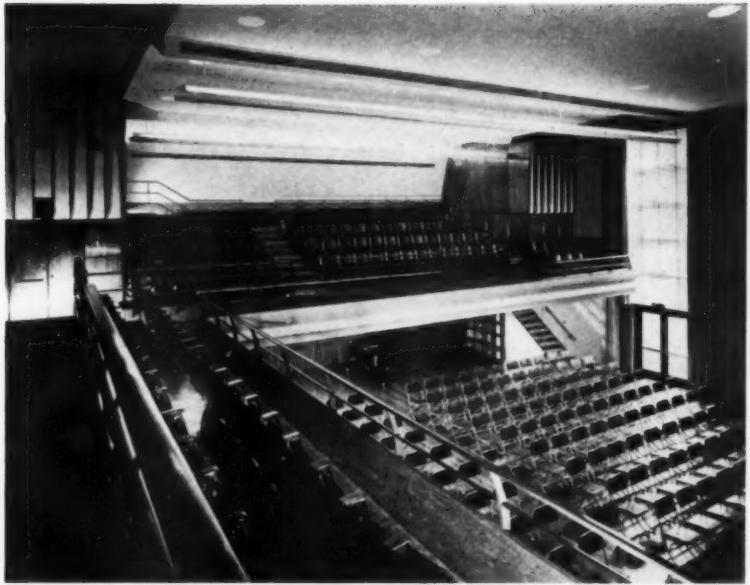


Joseph W. Monier



Bowling alleys, employees' cafeteria and lounges are part of extensive installations many insurance companies make to brighten the working and evening hours of their workers. Indeed these things are among the important reasons-for-being for this new building vs. converting the old

Auditorium, also part of employee facilities, has its acoustic design done frankly and expressively. The curved panels in the hung ceiling are smooth surfaces to reflect sound properly to back of auditorium. Other ceiling surfaces are acoustic treated to soften unwanted reverberations



SCIENCE CHURCH IN CONTEMPORARY FORM

*First Church of Christ, Scientist
New Haven, Connecticut
Office of Douglas Orr, Architect*

CHURCH DESIGN is probably the single most difficult problem in contemporary architecture. Compared to design in the great eras of the past, it is said, today's efforts are pretty feeble. We scorn the architectural symbolism of the past, not without good reason, but can't seem to find our own. It has even been said that today we are devoted to science, to intellectualism, and don't really find inspiration in a church, lamentable as that may be. Be that as it may, it is certainly true that church architecture is in a period of feeling about uncertainty, a time of "transitional" architecture.

This one, being a Christian Science church, is not so tied as most to liturgical or traditional dictates. But that fact is not overly important, except in details, for basically it is intended to inspire one to faith through Christian teaching, and so needs all of the age-old qualities of a church.

This, then, is a contemporary church, transitional in some respects, bold in some others. It has a spire, in fairly traditional form, but done with modern science and modern materials — a light structural framework with aluminum facing. In many other matters it utilizes modern methods and efficiencies.

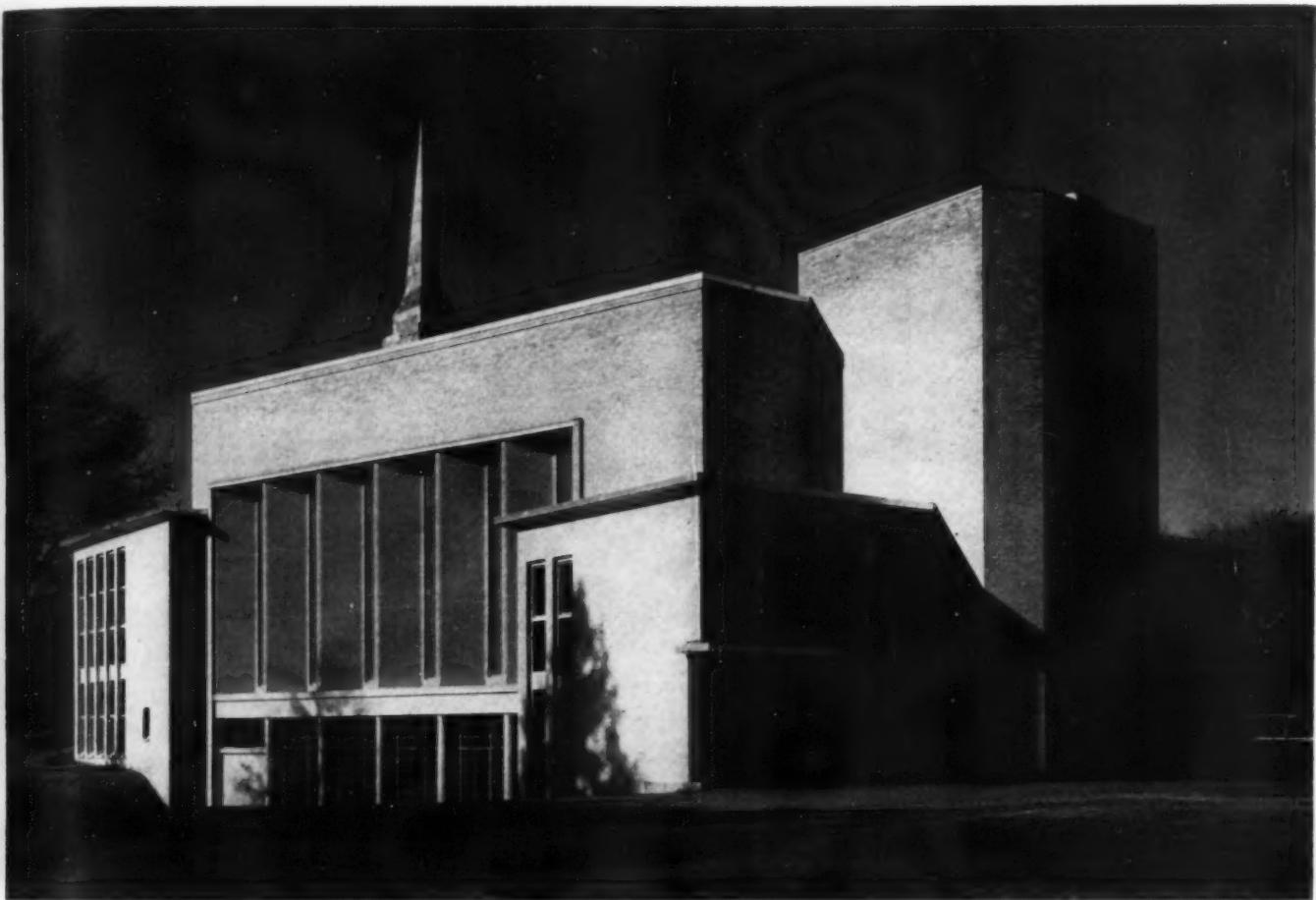
Purely functional, the auditorium is laid out in the shape of a truncated fan, this shape setting the form of the building and seen clearly in the exterior. The side walls are serrated to provide suitable acoustics, so that people speaking from the pews can be heard as easily as those on the platform. This arrangement also minimizes sun glare. The openings in these serrations are permanently glazed with double windows with one foot of air space between. This space is also used for indirect lighting.

To insure proper view of the platform the auditorium floor is curved downward, while similarly sloping ceiling planes are designed to aid the acoustics and provide troughs for concealed lighting to augment the down lighting.

The auditorium will seat 500; with a built-in speaker system to the outer lobby and Sunday school room, 900 persons will be able to hear visiting lecturers.



Monumental entrance wall is largely glass, framed in polished purplish red granite. Spire has light framework faced with light sheet aluminum

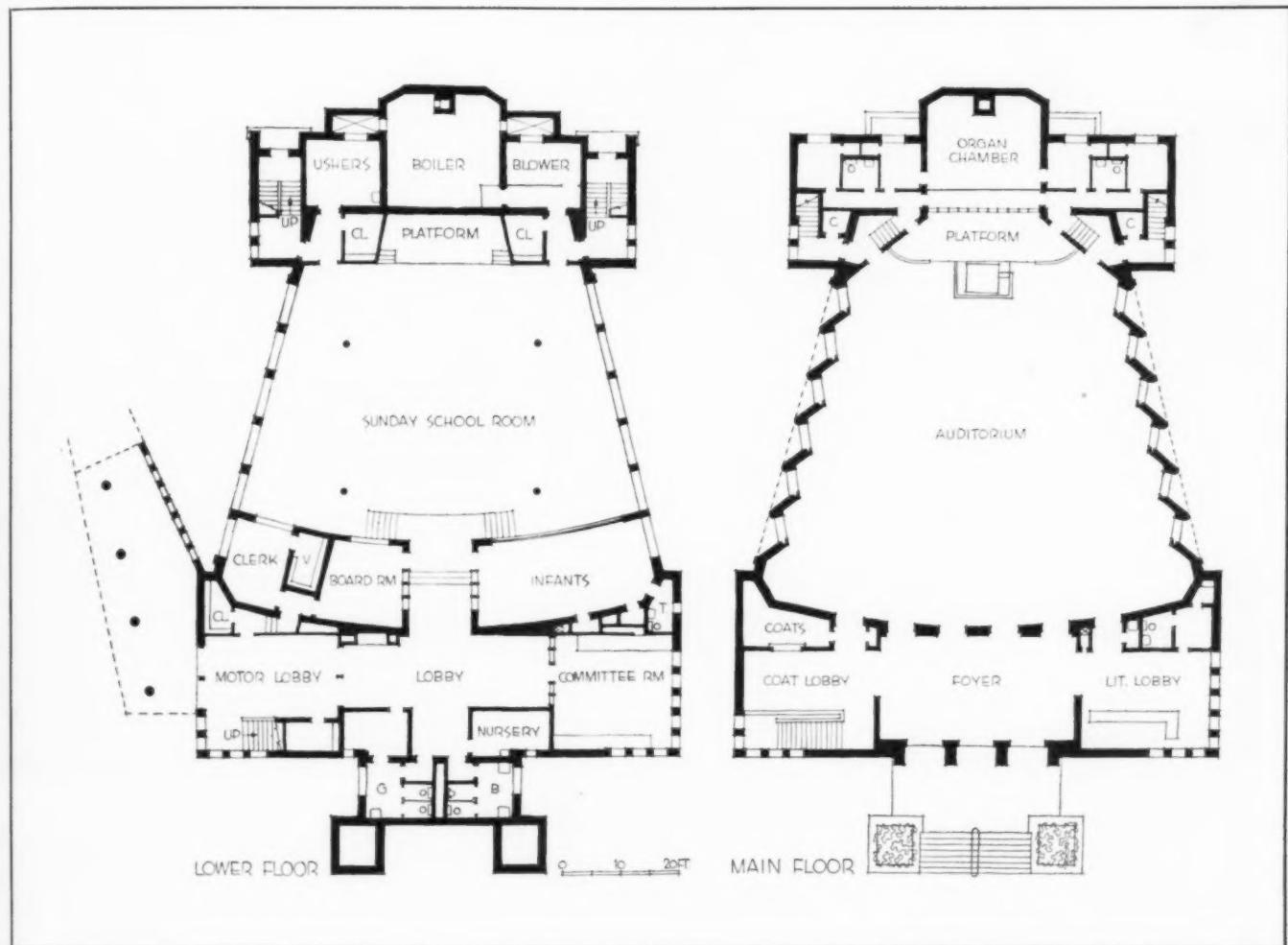


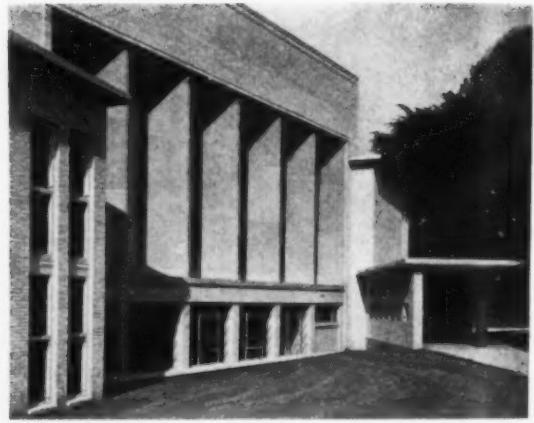
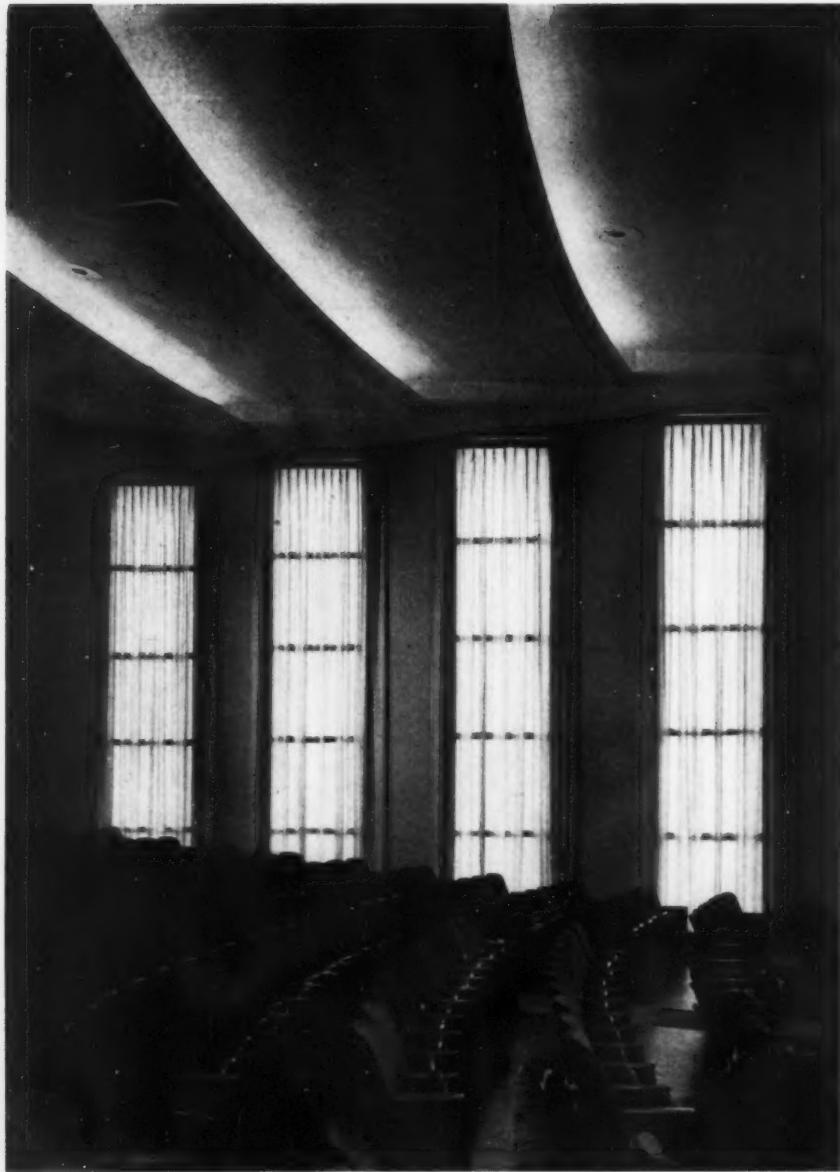
Joseph W. Molitor



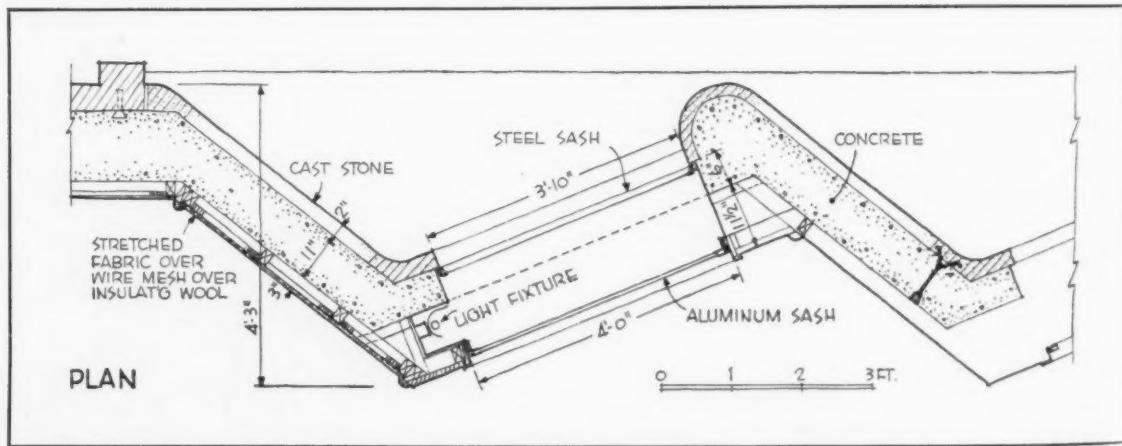
For a church of rather massive appearance it has a surprising amount of glass; daylight is especially effective in the tall and open entrance lobby, with its openness heightened by the addition of literature lobby beyond. Sunday school room (here shown furnished as reading room) also makes much of daylight. Auditorium has alternate panels of glass and plaster, with space between double glazing used for artificial lighting. Room is designed for good acoustics in two directions—both toward and away from the speaker's platform.

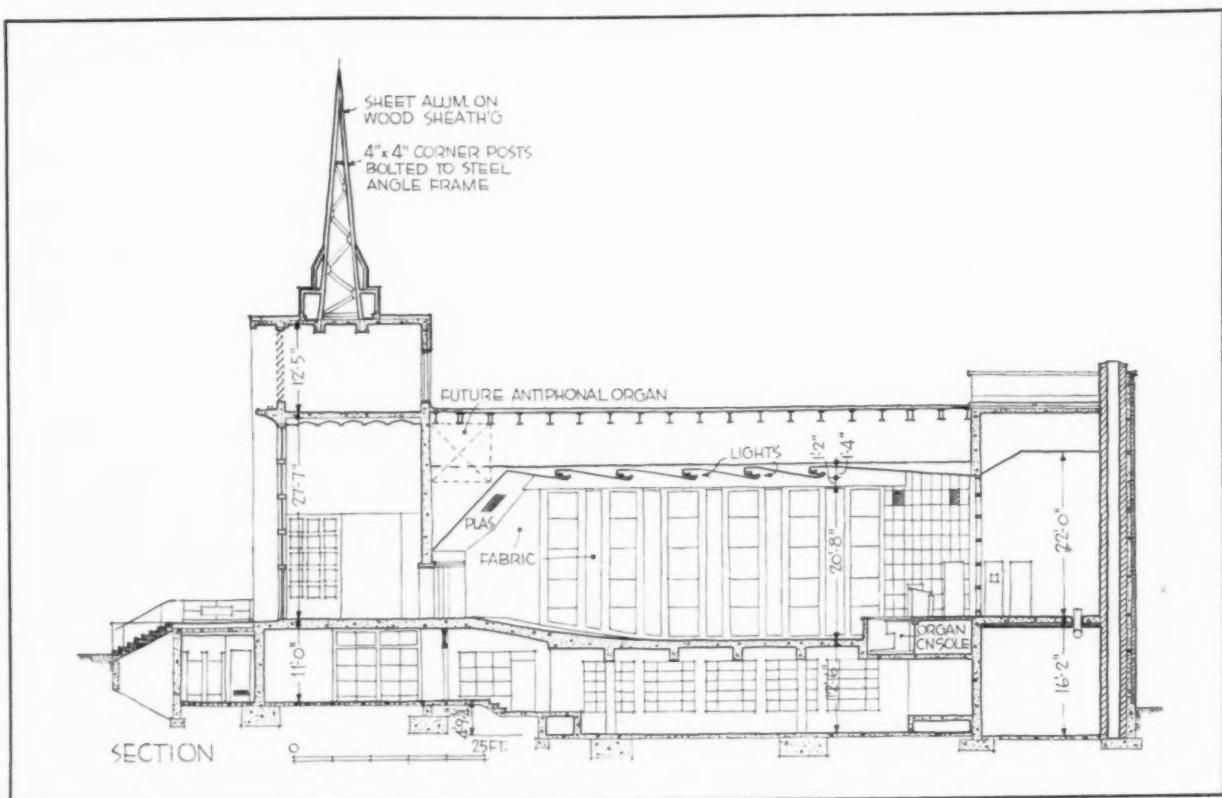






Joseph W. Molitor







ARCHITECT'S HOUSE BUILT IN TWO STAGES

Residence of Mr. and Mrs. Robson Chambers

Palm Springs, California

Clark and Frey, Architects; Robson Chambers, Partner

HERE IS A HOUSE WELL PLANNED at the outset to meet the changing needs of a young couple. Small and compact at first, it was easily enlarged several years after it was built, when the size of the family was increasing. At that time the new master bedroom suite shown in the plan opposite was added, the porch was enclosed in obscure glass to form a dining room, a sun bathing patio off the three bedrooms was closed

off with an aluminum and redwood fence 6 ft high, and a double carport was built.

Living room and bedrooms have large glass areas on the south to admit winter sun and a wide roof overhang to shut out the hot summer sun. All major rooms open to the outside through 8-ft-wide sliding glass doors. The house is fully insulated, air cooled and electrically heated. Construction is wood frame.



Photos opposite and below were taken before house was enlarged and grounds were landscaped; see next page for recent view of exterior. Oleander hedges form separate outdoor courts

Julius Shulman





CHAMBERS-HOUSE



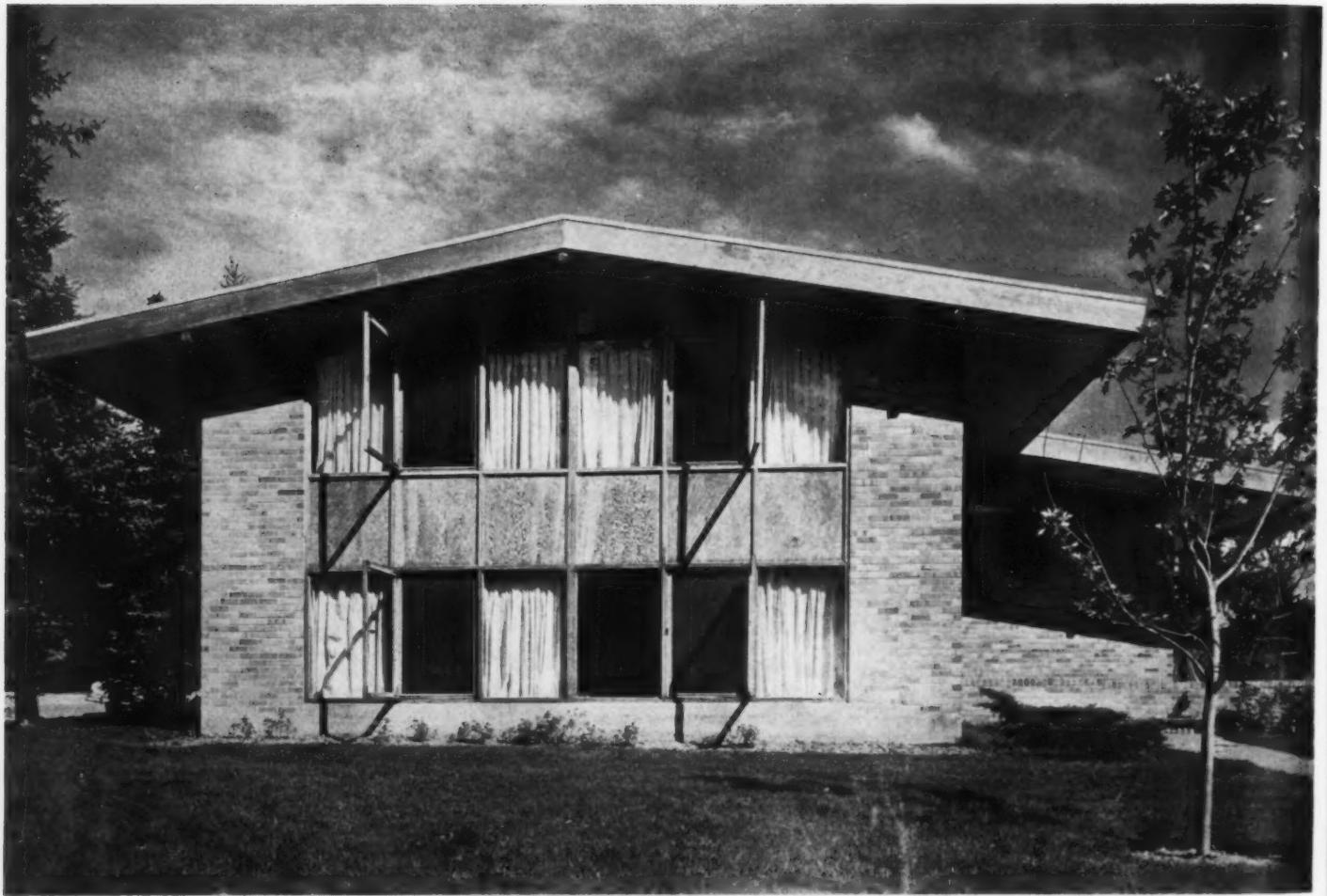
Left above: flexibility of living room is increased by sliding plywood panel between it and guest room. Left: roof is so framed that no lintels appear over sliding glass doors, but ceilings carry outside unbroken. Under side of overhang is corrugated aluminum

Opposite and below: high aluminum and redwood fence now closes off sun bathing patio. These new photos show how the additions and landscaping have carried original design of house to completion



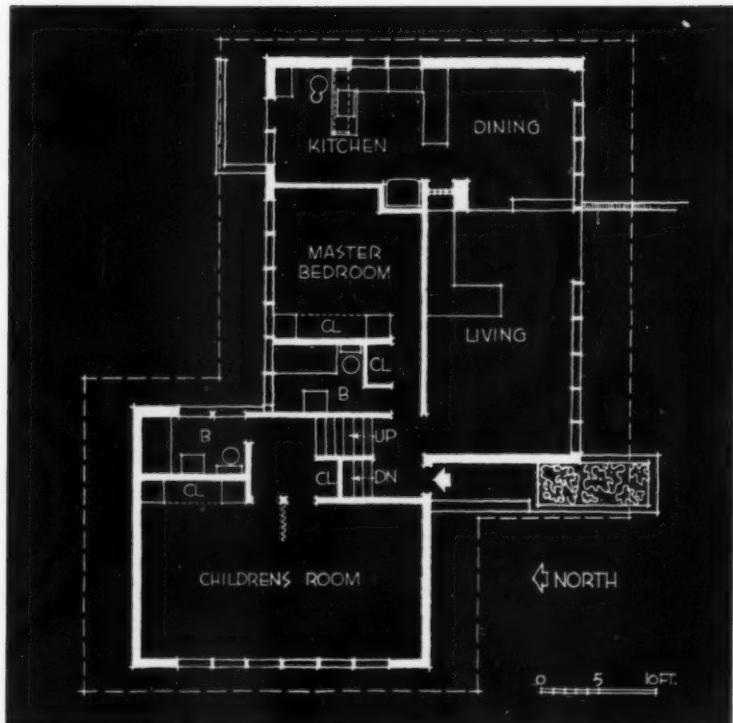
Julius Shulman





Hedrich Blessing





ARCHITECT'S HOUSE IS ACTIVITY-ZONED

Residence of Mr. and Mrs. Joseph Marlow

Denver, Colorado

Joseph Marlow, Architect

Louise Marlow, Associate

THE TWO PHOTOS OPPOSITE tell the story of this house: **T**a gently sloping site used to achieve the desired interior heights. The three levels are "zoned" to separate adult and children's activities. Living and dining rooms, kitchen and master bedroom are on the main level; half a flight above is the children's bed-playroom and bath; half a flight below (not shown on plan) is the architect-owner's office, originally designed as a recreation room easily convertible into two additional bedrooms. Since the stairway is immediately adjacent to the main entrance, there is no cross-traffic between zones.

The house is set back 40 ft from the property line, giving the children ample outdoor play space. A flagstone terrace along the south side, not visible from the main entrance, provides a sheltered spot for adult entertaining.

Exterior walls are brick, interior partitions and ceilings are birch plywood, lacquered. Floors are concrete, waxed. The built-up roof has 4-in. rock wool insulation. Heating is radiant.

MARLOW HOUSE



Dining room is separated from kitchen (above) by serving bar, from living room (below) by steps and two-way fireplace. Entire south wall is floor-to-ceiling glass, with doors opening to terrace



Hedrich-Blessing

PUBLIC LIBRARIES

By Charles M. Mohrhardt & Ralph A. Ulveling

Editorial note: The public library of a quarter century ago was too often a prominent example of civic pompousness; too typically a monument rather than a structure calculated to adapt itself to wide community service. Fortunately the character of libraries is changing: the trend veering away from ostentation and towards friendlier buildings that open out to the sidewalk and invite the public to come in.

Librarians too are steadily becoming more conscious of the importance of public relations and the ways and means by which the library can work itself into community life until it becomes the focus for a wide area of civic activity. This is all to the good and offers a sharp contrast to the old hushed institutional atmosphere that caused young and old alike to begin tip-toeing as they entered the carefully guarded silence within.

These developments are important because the need for new library buildings is immediate and widespread: significant as a segment in the over-all evolution of a new architecture.

About the authors: Charles M. Mohrhardt is associate director of the Detroit Public Library and chairman of the Building Committee of the Public Library Division of the American Library Association.

Ralph A. Ulveling is director of the Detroit Public Library and past president of the American Library Association.

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ARCHITECTURAL RECORD'S
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STUDY NUMBER 193

AFTER 25 YEARS OF RELATIVE QUIESCE, public library construction is booming. In metropolitan Detroit alone 17 public library buildings have been planned or erected in the past four years. Branch libraries are going up in cities all over the nation. Main library buildings for medium-sized cities are appearing in such widespread places as Phoenix, Stockton, Topeka, Winston-Salem, Miami and others. In smaller communities, the number of new libraries planned or under construction probably exceeds the combined total of both the aforementioned categories. Only the large central library buildings in major cities are as yet outside the boom, although many of these are now preparing for major enlargements. In terms of new construction needs throughout the country, the library potential far exceeds that which has been completed.

The best of the new buildings show that a basic change in concept is taking place. The library is no longer a mere symbol of culture or a civic monument with pillars and impressive masses of steps: instead it is becoming a friendly place which reveals the resources within and invites one to share its hospitality. Simplicity of form, openness and a functional layout are its basic characteristics. But its apparent simplicity is achieved only as the result of much study.

The change in public library design has been brought about by several influences: a natural dissatisfaction with the too often inefficient, uninviting and poorly lighted buildings of the past; rising construction costs; modified physical requirements due to improved methods of library operation; the inauguration of new serv-

ices to make the public library's resources more useful; a realization that the site has an important bearing on the design and use of the library; and the need for greater efficiency in operation and economy in maintenance.

This brief introduction merely points in general terms to the problems in modern public library design. The methods for dealing with them will be considered later. Before considering them in detail, however, we would like to point out that to obtain the best possible library building, close cooperation between the architect and the librarian and his staff is required. The specialized knowledge of each is essential to provide a workable solution. The development of a successful library building is dependent upon a well thought out service plan and an efficient layout. These in turn are dependent upon the librarian's clear statement of the problem and the writing of a library program.

I. THE LIBRARY PROGRAM

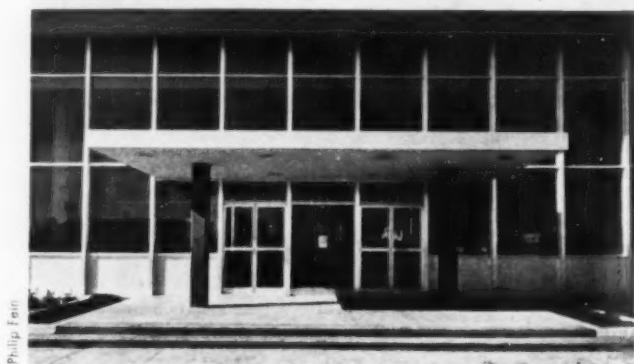
In planning a new library building, the first step is the preparation of a program which will serve as a guide for the architect. In creating such a program the librarian and his staff should outline the objectives, the services and their interrelationships, the physical requirements and the operational procedures of the projected library. A carefully prepared program will help the skilled architect prepare a workable plan and proceed without delay and uncertainty.

Consultant. The translation of the program into a workable plan is difficult for the average librarian since he is usually inexperienced in building matters. As John E. Burchard, architect-librarian-educator, has stated, "Librarians, like cooks, know what they do but not why they do it nor how they could do it better." It is therefore advisable and highly desirable from the architect's point of view to retain a library building consultant — a librarian who has had wide and recent experience in both planning and building problems. The library building consultant usually translates the librarian's program into building requirements, recommends means for fulfilling these requirements and confers with the librarian and architect as the plans are developed. He also draws on his experience to avoid unnecessary features and to incorporate those which will produce a sound plan — one which will keep annual operating costs at a minimum and yet provide a maximum of public service.

Clientele. The public library is a community center for those who want information on any subject or who are interested in self improvement through home reading and study or who read for pleasure. Businessmen, professional persons, skilled and unskilled workers, teachers, students, housewives and children, are all a part of the clientele served. The total number of people who use their community library is far larger than generally realized. A library's registration file is the record of people who have applied for the privilege of borrowing books and usually comprises the largest credit file in the community, with the possible exception of those the utility companies own. The library directly serves more individuals in the course of a year than any other department of local government except the water department, the department of streets, the police traffic

division and the garbage collection services. In spite of its size and importance, even the public school system does not work with as many persons over a twelve month period as the public library does.

Services. Public libraries are much more than book warehouses and book distribution centers. Were these their functions, housing them would be simple; extensive book stacks in the basement or elsewhere, together with a room for delivering books to the patrons would fill these requirements. Instead, libraries must stimulate people's interest by bringing to their attention books that can be helpful to them even though they may be unaware of their need for help. Parents having disci-



plinary or other child training problems may not realize that patterns have been worked out to deal with such questions until a book on the subject is brought to their attention. This is but one example of hundreds that could be cited. With the vast diversity of peoples' interests and needs, special display racks are not enough; the entire book collection must be organized as a continuous display so individual patrons will be drawn to the section of greatest concern to them. Recently the typical book collection has been organized according to the so-called *reader interest* classifications: that is, into such categories as The Home, which includes gardening, house repairs, interior decoration, etc.; Today's Events, which includes social, economic and political problems; Self Improvement, which has a strong appeal to many; and nine or ten other classifications. Librarians are

concerned with providing stimulation of this and other types to individuals using the library, but the best means for achieving it within limited space is yet to be achieved. The implementing of this fundamental of library service calls for brilliant and imaginative design which architects and librarians must deal with as a joint problem.

Stimulation of group interests by means of meetings, film forums, discussions and story hours is another important aspect of modern public library service. Facilities must be provided for such activities.

During the war great advances were made in the scope and use of recordings and educational motion

The Community. Though the library has its own promotional program aimed at individuals and groups, it occupies also a significant place as a community center for furthering civic undertakings not of its own sponsoring. Some state laws provide that any public building may be commandeered for polling purposes. Even without such legal compulsion many libraries provide quarters for voting booths and for the registration of voters. Civil defense training classes are sometimes held in libraries. In other ways libraries often become integrated into community life: businessmen's associations, women's clubs, hobby groups, community councils, and sometimes girl and boy scout troops meet regularly in

Top left: Miami Public Library, Steward and Skinner, architects
Below: Sherwood Forest Branch, Detroit, William E. Kapp, architect

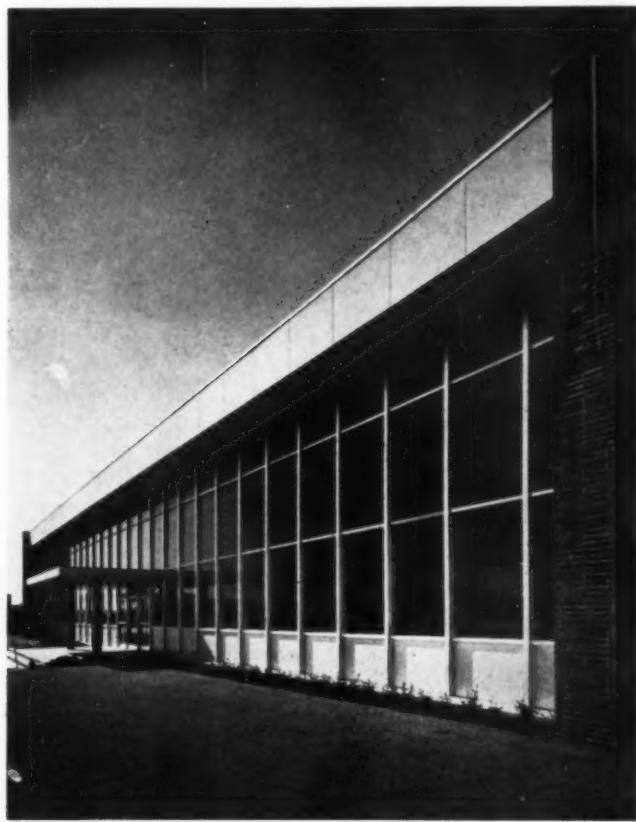


Phil Olsen

Left & right: Richmond, Calif. Library, Milton T. Pflueger, architect

pictures. Both of these media now occupy a definite and increasingly important area within the framework of library service.

All of the above are types of service which can be employed for both young and old, but because of fundamental differences between age levels, even the smallest library's book collection is separated further into groups for Adults, Children and frequently for Youth (the teen-ager), and in addition all libraries provide a Reference section. In larger libraries a further breakdown becomes necessary, organized around broad subjects such as Science and Technology, the Fine Arts and Music, History and Travel, Social Sciences, or other combinations designed for a particular community's needs. This may appear to be a complex pattern, but the total interests of a community are also complex.



Philip Fein

the library. Thus the library's facilities must be planned to accommodate these varied needs with a minimum of expense and a maximum of convenience.

Physical Requirements. The program should contain detailed information on the spaces needed for public service, staff operations, meeting and community service rooms, the book collection, seating requirements, service points, communication equipment, public toilets, and in some instances telephone and check room facilities, booklifts, elevators or still other physical elements. The interrelationship of subject materials, service areas, work rooms, offices, etc., must also be carefully studied and explained in the program. Before preparing this data the librarian should give careful consideration to non-book materials and equipment such as phonographs, records and microfilm readers.

Operational Procedures. An attempt should be made to simplify operational procedures since they will affect the plan. A management analysis will often reveal simpler and more efficient methods for accomplishing routine procedures. Modern methods will produce a more efficient layout and reduce space requirements. For example, the recently perfected transaction method of book-charging has made it possible to simplify the control desk design and effect economies in over-all building requirements. Whether this transaction system is carried out photographically, by means of punched cards, or by the audio-recording method, these procedures eliminate the need for such space wasters at the desk as the old fashioned book-card slipping trays. Similarly modern methods reduce the registration file by one half because the "number file" can be entirely eliminated — thus saving area, files and staff.

II. SITE AND BUILDING

Site. The choice of a site has an important bearing on public acceptance and use of the library. A prominent, easily accessible location is required to attract a large number of persons. Therefore, the library should be placed where people naturally converge — in the heart of the shopping and business district, rather than in a remote location such as a park, civic center or quiet side street.

The site should be large enough to provide parking space for both staff and public. A slight setback from the sidewalk will yield space for a small planted area and a bicycle rack, the latter located near the entrance so it will eliminate the usual clutter of bicycles about the door. The planting bed will add to the building's attractiveness and will focus attention on it.

As we know, the shape of the lot will inevitably affect the layout of the building. A square lot often presents difficult problems unless it is of rather large area, while a rectangular lot with long street frontage is perhaps the most usable, though a deep lot can also be adapted successfully if the frontage is not disproportionately small. Triangular sites should in general be avoided. Lots facing north or east seem desirable for they permit large glass areas in the street facade and yield a maximum of natural light in the large reading areas. South and west exposures usually present the problem of glare which must be controlled by blinds, draperies or other means.

Buildings. The most readily noticeable exterior features characteristic of recent public library buildings are the entrance at sidewalk level and the generous glass areas in the front. The more accessible entrance, without steps or terraces, makes it as easy to enter the library as to enter the neighboring shops. The big expanse of glass enables those who pass to see the colorful and inviting interior, the books and the people reading. At night the library appears as an attractively lighted showcase — a most effective and desirable public relations feature.

The space for public service is no longer divided into boxlike rooms for juvenile, adult and reference services since solid walls freeze the plan. Where a separation is desirable the division can be made by freestanding bookcases or other low elements. Then when the proportion of children to adults rises or falls, the library service

areas can be adjusted to meet this change. Flexibility has become a fundamental requirement of great importance.

Convertibility is another important characteristic, especially of the new type branch library. Many of the older library buildings are still operating in poor locations because the buildings cannot be sold for any other use. Neighborhoods change over a period of years and a site well chosen today may be a poor one 25 years hence. The modern branch library building with its large open areas devoid of columns and interior bearing walls can easily be converted to commercial purposes and will have a good resale value in the future.

Illumination should be evenly distributed over the public service areas so that freestanding bookcases, tables, chairs and other equipment may be moved to new positions and still be well lighted. Desk and floor lamps are generally not satisfactory for public library use as they create a disturbing contrast in light intensity, require numerous power outlets and give the room a cluttered appearance. Though there is no general agreement on the amount of light required for large reading areas, experience indicates that 40 ft-candles is adequate for most readers.

At the risk of seeming too obvious, we remind our readers that air conditioning is desirable for the preservation of books and highly recommended for staff efficiency and the comfort of patrons. This feature has been incorporated in many recent library buildings with good results.

A number of design principles can be employed to change the often forbidding atmosphere of earlier days into one of cheerfulness and welcome. Such features as lower ceilings, elimination of corridors and stairways

Phil Olen



Main reading area, Sherwood Forest Branch, Detroit Public Library, William E. Kapp, architect

wherever possible, colorful walls, gay colors on rebound books, and furniture upholstered with plastic in inviting colors offer a sharp contrast to the pretentious architecture and somber tan and brown vogue of the past. The long rows of tables and chairs can also be a thing of the past. They can be replaced by inviting lounge areas equipped with comfortable chairs, sofas and light end-tables one can pull close to his chair for writing. Reference areas can be provided either with individual tables or those which seat four. In selected areas the installation of a public address system for the piping of music or library announcements is an innovation.

III. LAYOUT

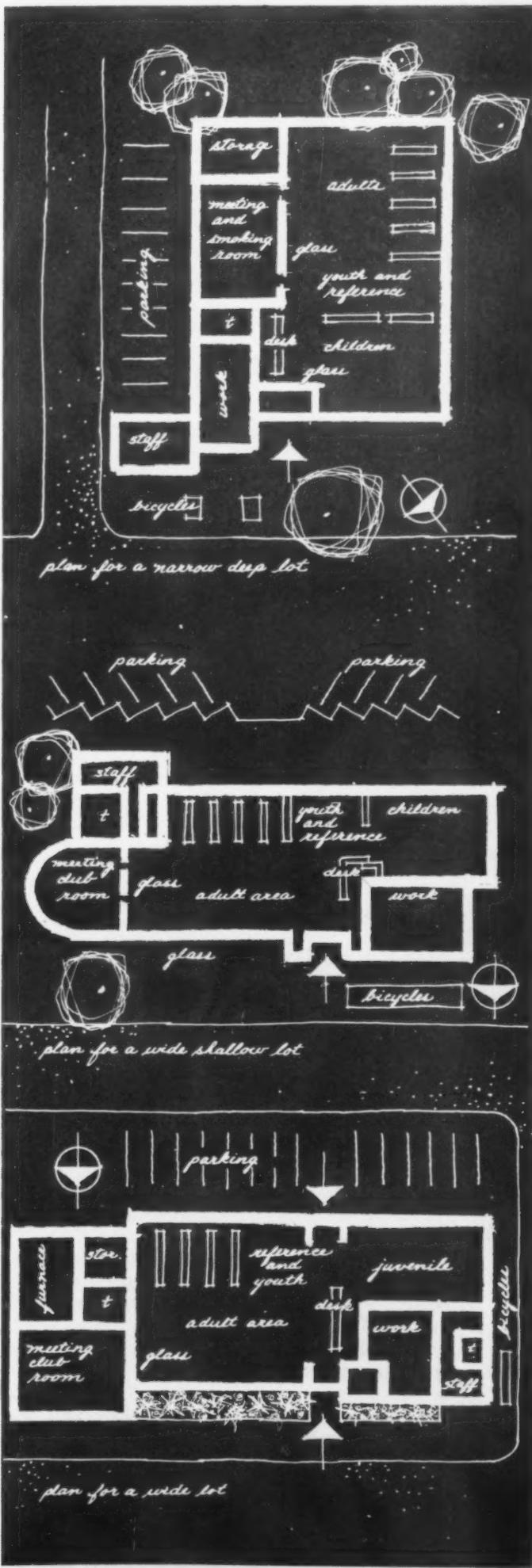
In planning a public library building certain principles of desirable interrelationships between the various functions or service units must be recognized. The degree to which planners succeed in applying these principles will determine in large measure the success or failure of the plan. In almost every situation, however, certain compromises will be necessary. The careful weighing of the advantages and disadvantages of each such compromise against some alternate compromise is important. Without creating confusion in the minds of readers, it is impossible to consider here the principles applicable to every type of building. Therefore, we will discuss here only those which apply to the small or branch library.

The *youth service* should be located between the children's and the adult areas. Thus the youth in the transitional period may progress from one service to the next as rapidly as his intellectual interests permit.

The *reference facilities*, because they are used heavily by boys and girls of high school age, should be closely



View from smoking room, Thomas Jefferson Branch,
Detroit Public Library, William E. Kapp, architect



adjacent to and sometimes in the area used by the youth group. Except in a very unusual situation it is unwise to locate them in a remote part of the building merely because it offers quiet.

The *adult lounge* should be near the adult book stacks and also directly inside the large glass area where it can easily be seen from the street. This is likely to be the library's most attractive feature.

The *meeting room* should have direct or nearly-direct access from the children's area as well as from the adult area. This arrangement will permit crowds of children to move in and out for story hours or other meetings

have direct access from outside or from the vestibule so truckers making deliveries will not interfere with the public service.

The *branch librarian's office* should directly adjoin the work room for supervisory purposes but should also have an entrance from the public areas so patrons desiring to visit may do so without difficulty.

The *staff kitchenette* may be located adjacent to the work room for staff use only, or it may be near the meeting room where it then performs the dual function of staff use and occasional use by groups holding meetings in the building.



Phil Olsen



without disturbing the other patrons. Its proximity to the adult area makes it useful as an adult smoking room when it is not being used for meetings. An exit from this room to the street allows the library proper to be closed at its usual time while late meetings continue.

A *storage room* for folding chairs should adjoin the meeting room, thus permitting the janitor to set up or remove the chairs without disturbing people in the large reading areas.

Public toilets should serve both the public service areas and the meeting room when the rest of the building is closed. It is desirable to have toilet entrances visible from the control desk.

The *staff workroom* is best placed directly behind the control clerk's desk so routine operations such as sorting returned books, etc., may be removed from the desk and yet be conveniently nearby. This room should also

Packaging, that is, the grouping together of non-public service areas, produces a cleaner plan by consolidating these units in one area to provide an open and regularly shaped public service space. The work rooms may be exceptions to this principle when other factors control their location.

A common planning mistake is the setting up of multiple small work rooms instead of uniting several in a large package. For instance, one work room for the adult, juvenile and reference units will save in building costs. Further, it will permit a saving in both maintenance and management costs since one or perhaps two typists may serve all three departments rather than having separate typists and equipment for each.

Though the frame of reference for the above principles is a branch library, many of these principles can be applied as well to other types of library buildings.

IV. BUILDING DETAILS

The foregoing section was concerned with the larger problems of layout. Very often, however, a library's convenience and operating efficiency depend on the detailed considerations that have been incorporated into the scheme. We list some of the more important here.

1. When space permits, all public service should be located at ground-floor level. Such an arrangement makes the library more accessible to the public, concentrates the public service staff on one floor, permits more flexibility and coordination in work assignments, eliminates duplication of control desks, typewriters and

corner of the eye. Composition flooring is recommended on the basis of color, cost and maintenance.

2. In the meeting room, an underfloor conduit carrying wiring from the sound motion picture projector to the loud speaker near the screen eliminates the hazard of an electric cable on the floor. A three-way switch near the projector will enable the operator to control the room lights without leaving the projector.

3. Lower ceilings have many advantages. They facilitate good lighting and the replacement of electric lamps, reduce heating costs, and because of smaller wall areas make cleaning and repainting cheaper.



Joe Clark



Phil Olsen

Far left: Sherwood Forest Branch, Detroit Public Library, William E. Kapp, architect. Center: meeting in Detroit Public Library; folding tables and chairs for multi-use. Above: Thomas Jefferson Branch, Detroit Public Library, William E. Kapp, architect

other equipment, and also obviates space-consuming public stairways and corridors. If a large book storage area is required it can be located in a basement directly below public service areas. With service stairways piercing the floor this places the storage area within 8 ft of the reader. Storage stacks on upper levels are usually more remote because public areas are higher.

2. Each floor should be level. Though some interesting architectural effects may be achieved by stepping down or up into another space, even one step or a ramp will hinder the easy movement of book trucks for the life of the building.

3. Light colored floors are recommended because they reflect more light upon the lower bookshelves and make dirt less apparent. Many people find a contrasty checkerboard floor to be disturbing when reading; the floor appearing to be in motion when viewed from the

6. Acoustical treatment by means of acoustic ceiling tile, cement and cinder block interior partitions, the arrangement of book stacks, draperies and other elements must be considered by the architect. Librarians no longer talk in whispers and try to maintain the tomblike silence of older days, but they do like to keep the noise level low so it will not disturb readers.

7. Librarians have come to recognize the need for smoking facilities. Experiments with smoking in all public areas have been found unsatisfactory for several reasons: insufficient ventilation for smoke removal, objections of non-smokers and burns on furniture. However, these difficulties can be lessened by providing a designated area for smoking. If space is limited, a smoking room can be gained by planning a dual purpose room which can also be used for meetings. A glass partition separating this room from the general reading area will

permit excellent supervision and allow it to be shut off for meetings by means of curtains.

8. A glass enclosed vestibule is a pleasant building feature giving the patron an immediate view of the book collection and reading area as he enters. Oversize vestibules, long corridors, stairways, turnstiles and other impediments confuse and deter the public.

9. The control desk is best located adjacent to the entrance and in a controlling position for all or nearly all of the public service area. Psychologically, locating this desk parallel to the borrower as he enters seems better than confronting him with it. The old type control desk was a bulky and forbidding barrier to borrowers, who felt they were under observation from the moment they entered the building. Furthermore, the mass of routine functions carried on at the desk gave the impression that libraries were more concerned with cards and records than with readers and books. The contemporary control desk is smaller and lower: 35 in. high at the adult end and 30 in. high at the juvenile end. Such a desk is made feasible by locating a work room directly behind it and removing from it much of the routine work formerly visible to the public.

10. The use of contemporary colors for walls and floors is a comparatively recent trend in library decoration. Unlike the somber tones of the past, such a scheme has done much to create a more cheerful atmosphere. Color can also be used effectively for such equipment as book shelving, vertical files, desks and map cases.

11. Attractively simple and sturdy furniture is now available in a wide variety of designs and colors. Many libraries are using chairs and sofas upholstered with plastic over sponge rubber. This combination has proven to wear well and is easy to keep clean. When subject to continual wear, chairs designed for commercial use have proven more durable than the domestic type. Fabric covered chairs and sofas, although attractive, seem more difficult to keep clean than those with plastic upholstery. In selecting equipment it is important to keep in mind the height of elements and to avoid the confused and displeasing look that results from too many variations.

12. The elimination of closets will help reduce building costs and provide greater flexibility. In older buildings it was found that oversize closets were apt to be filled with junk and undersize closets were useless. Movable steel or wood storage cabinets have proved to be satisfactory and additional units may be added if the need for more capacity occurs.

13. Permanently built-in features such as phonograph listening booths and microfilm reading booths are of questionable desirability since they tend to freeze the plan and require expensive duct work for heating and ventilating. Furthermore, they are wasteful of floor area. Microfilm reading devices of the newer type can be used satisfactorily in brightly lighted rooms. Table-top record players with earphones have been found highly satisfactory. We advise a power grid under the floor for such areas.

14. A bin type periodical case is desirable. Current issues of magazines are displayed on its hinged sloping surfaces; previous issues are stored behind.

15. In the work rooms both space and expense can be saved by employing work stations instead of desks. Each work station can be assigned to a staff member,

thereby providing each with ample work and shelf space as well as one or more drawers.

16. Metal book shelving, now available in a variety of sizes, shapes and colors, is generally economical to purchase and easy to clean and maintain.

17. Light-weight racks on wheels are a convenience in transporting and storing folding chairs. Such equipment is now available from several manufacturers.

18. Self-contained kitchen units incorporating a small stove, refrigerator, sink and cupboard space provide the necessary equipment for both staff lunches and teas in the meeting room. The use of this type of unit together with a snack bar attached to the wall is recommended to conserve space in the staff quarters. Enough area for a small staff lounge can then be gained within the same room.

19. Two exterior conveniences are also suggested — one for the staff and one for the public. An automatic timer to turn off the floodlight for the parking lot will permit the staff to leave while the lot is still lighted.

A drive-up book return box at the curb in front of the building will permit patrons to return books when the library is closed. These have proved to be an effective device for good will as well as a convenience to patrons. The boxes were designed by a librarian and are now available commercially.

Detroit Free Press



Above, record players with earphones, Detroit Library
Right, bin-type periodical case, all Detroit branches.
Far right, drive-up book return, now a standard product

V. CONCLUSION

In the face of rising taxes and costs, both municipal officials and a vociferous public are insisting on economy in municipal expenditures. Librarians, however, steadfastly hold that service cannot be skimped and that new educational opportunities create the need for improved service. In the face of these conditions this study has attempted to provide sensible, helpful guidance to architects and librarians concerned with this common problem. Our conclusions are based on long study of the physical requirements for successful library service and on analysis of the current trends in building which are evident across the country. Since buildings of the type here presented have met the test of use, it is logical to ask the question, "What has this new development meant to libraries?" As far as possible we will answer this question from personal experience since this is something we can speak of with certainty.

In communities where Detroit's new branches were built, the attitude of citizens has been one of unqualified approval and enthusiasm. Instead of suffering by comparison with the more monumental branch buildings of earlier years, these new structures have been acclaimed for their attractiveness and simplicity. Unusual evidence of the community's feeling came recently

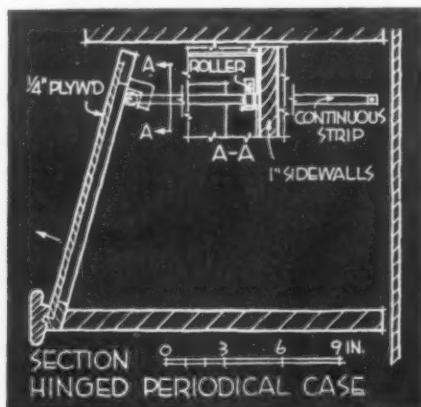
when the executive vice president of one of the city's largest banks asked if he and other bank officials might be shown through several of the library's new buildings in order "to get ideas" for their new branch bank buildings. As a result of his first trip, he has returned twice to see them again.

Municipal officials responded with equal enthusiasm. The first of the post war branch libraries was erected for less than half the cost of the last pre-war building (1939). Repeatedly since then the heads of other municipal departments who have sought building funds have been told to "do something like the library did." The sincerity of that remark was evident when funds for two branch libraries were allowed in the next budget. We are now completing our seventh branch since 1950 and more are contemplated.

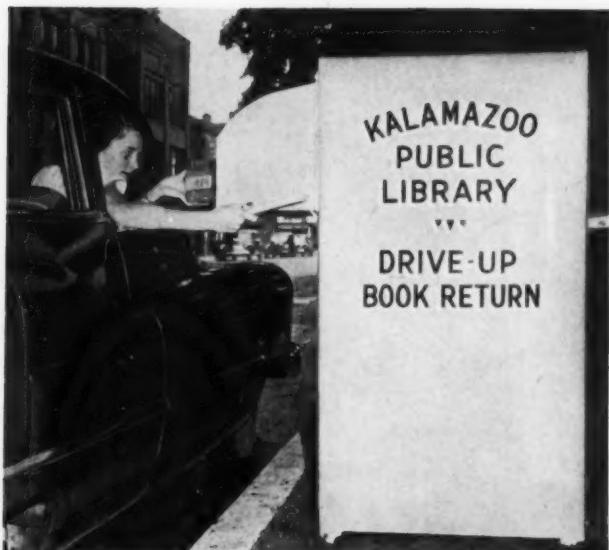
From the standpoint of operating costs the results have likewise been favorable. Despite larger service demands, the new buildings are being operated with from two to four less staff members than their earlier counterparts. Since this represents a continuing economy, year after year, the benefits will be prolonged.

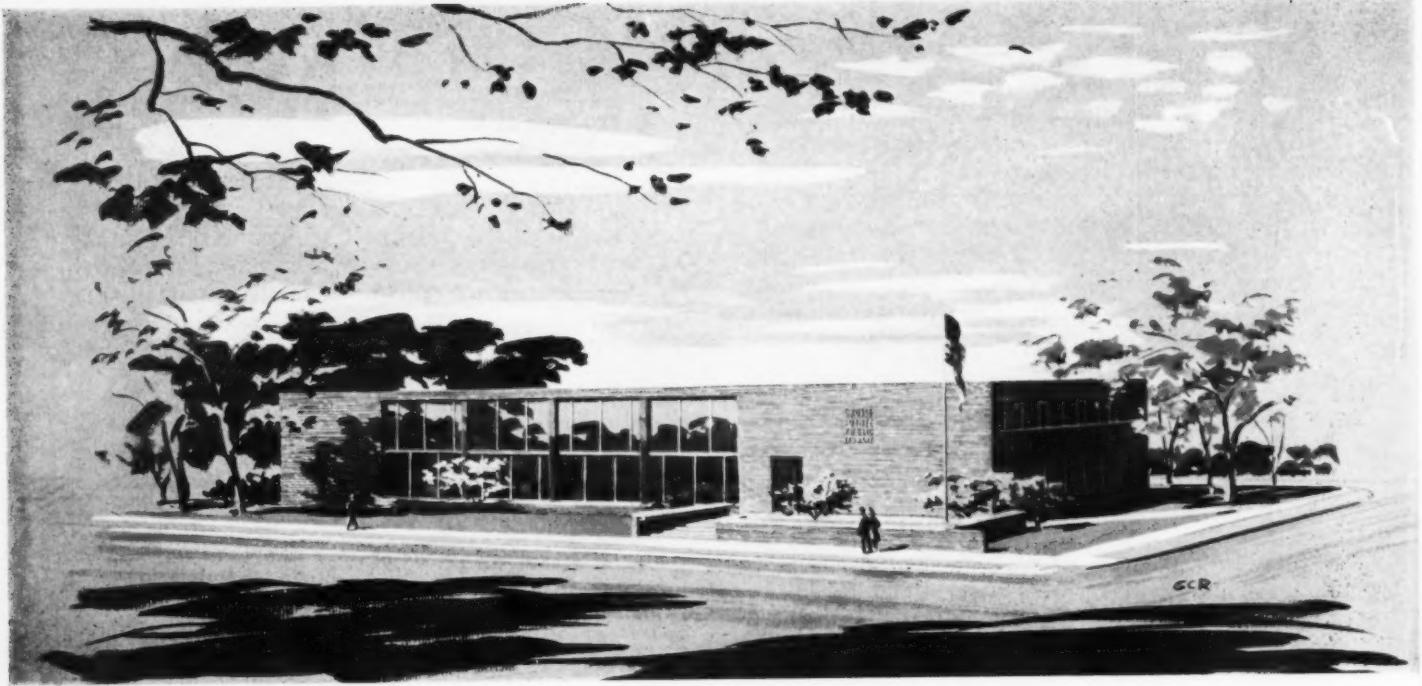
Thus with the benefit of public support and administrative approval, the public library is advancing its service program more rapidly than at any time in its 90-year history.

Phil Olsen



Kalamazoo Gazette

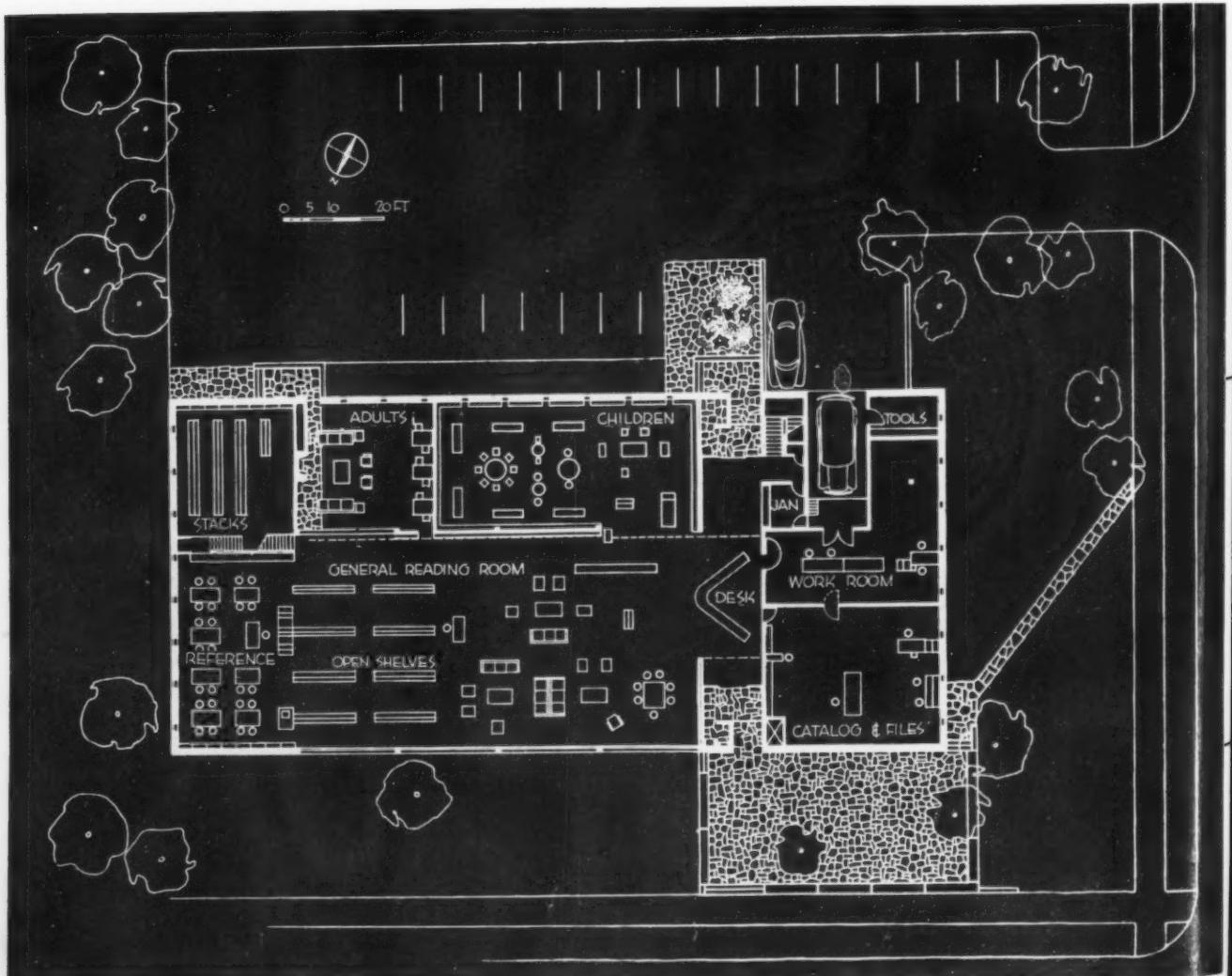




Rendering by George Cooper Rudolph

GROSSE POINTE PUBLIC LIBRARY

Marcel Breuer, Architect



Library Consultant: Charles M. Mohrhardt

Structural Engineers: Farkas & Barron

Mechanical Engineer: Benjamin L. Spivak

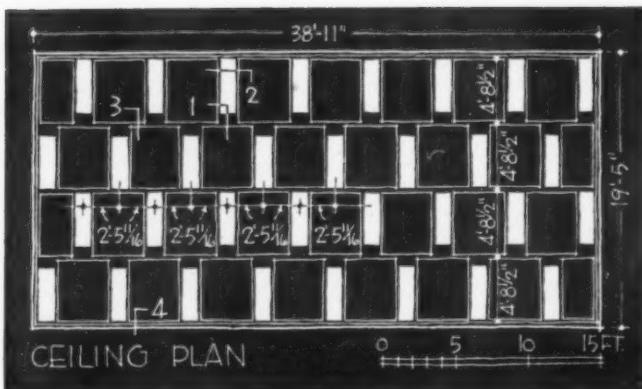
Electrical Engineer: Bernard L. Greene

Contractor: Albert A. Albrecht Co.

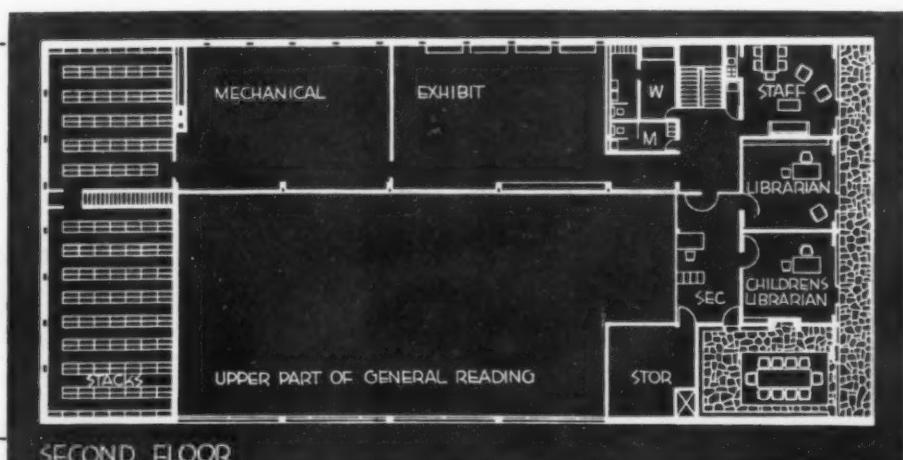
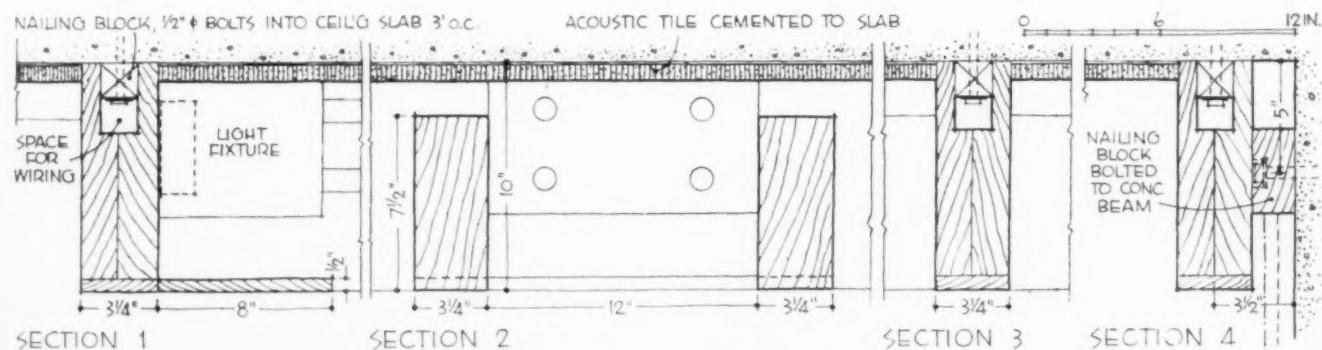
LOCATED in one of Detroit's older and more prosperous suburbs, this new library is now under construction and will be fully reported in the RECORD after completion. The building will be a part of the town's principal shopping area; should strike a refreshingly contemporary note in its predominantly conservative surroundings; may point the way towards a more forward-looking future architecture about it.

Many of the principles our author-consultants have discussed in their text have here been skilfully translated into reality: the attractive two-story reading area opening to the street to tempt passers-by inside; adequate parking with direct access; furniture arranged in lounge groups rather than rows of tables; stacks open to the public; a low control desk that actually points the way inside rather than barring it.

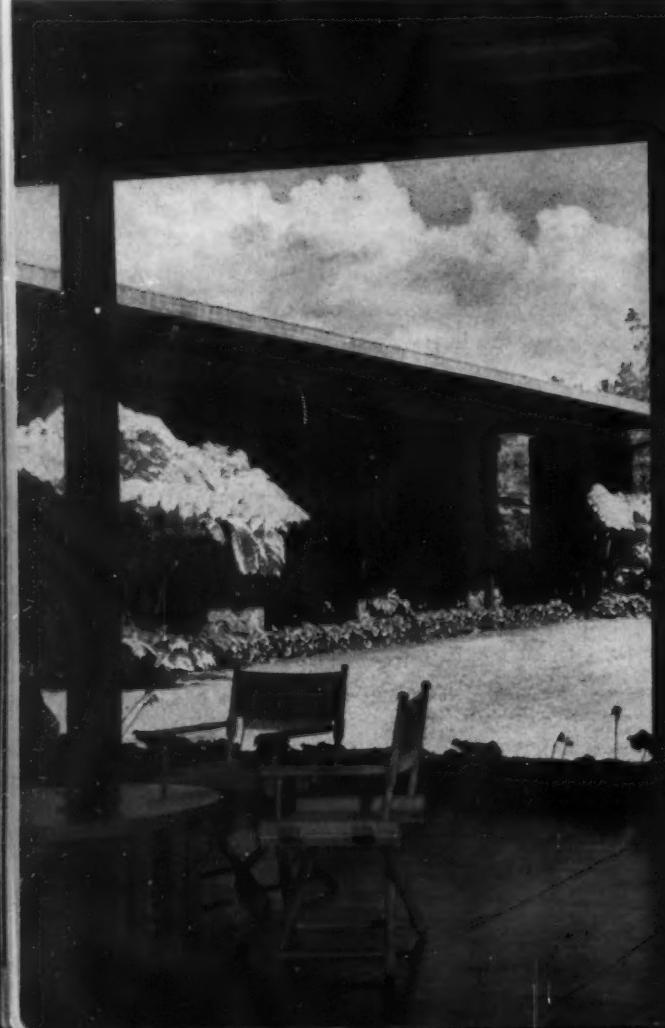
Since the architect is doing the interiors, design unity should be achieved throughout.



For main public area, lighting of approximately 40 ft-candles will come from cold cathode tubes placed within the smaller rectangles of an overall ceiling pattern of 3 by 8 wood baffles. Detail shown below



Ground floor, left, is entered either from street or from parking area, with central desk controlling both means. Second floor, above, is mainly devoted to staff use, with the exception of the exhibition room





R. Wenham

HAWAII COUNTY LIBRARY

Hilo, Hawaii Island, Hawaii

Merrill, Simms & Roehrig, Architects

The reading lanai and the landscaped court it faces, left page, constitute a pleasant place for light reading, chatting or strolling. The main facade and auto entrance court are shown above with the Naha Stone, a relic of national significance, in the foreground.

FINISHED IN LAVA ROCK from two neighboring volcanic canoes and native hardwoods of two varieties, this handsome structure is both successful functionally and attractively indigenous in character. It was opened for use early in 1951.

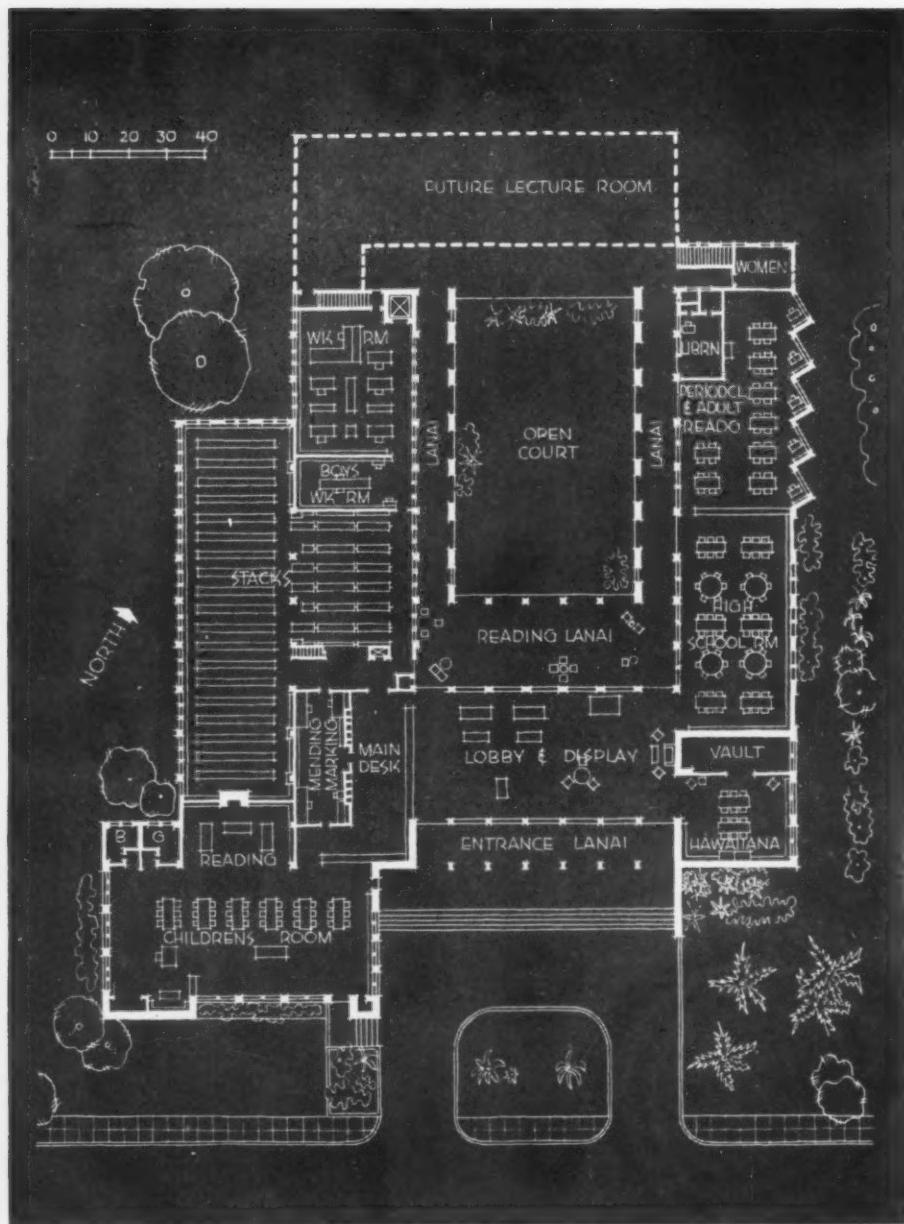
This is the central library building for the entire County of Hawaii and also serves the city of Hilo as a free circulating library, offering books, pamphlets, periodicals, phonograph records, maps and mounted pictures. The aforementioned materials are distributed to the entire island through 100 odd branches, deposit stations and schools. The basement floor is set aside to service a bookmobile which covers rural districts and schools.

The librarian, Helen Willocks, is enthusiastic over the natural and rapidly developing emergence of the new building as a community cultural center. Facilities are available for committee meetings, lectures, film showings, art exhibits, civic discussion groups, etc.

The structure centers about a landscaped rectangular court which is open to the sky and bounded on three sides by the present building; a future lecture room and gallery wing will complete the quadrangular scheme. Entrance is through a glass enclosed lobby opening out to a pleasant lanai beyond, which forms the main outdoor reading area.

Walls are reinforced concrete faced with lava rock; roof is mineral-surfaced built-up over 2-in. redwood plank on redwood purlins and fireproofed steel girders.

HAWAII COUNTY LIBRARY



R. Wenkam



Plan, above, shows organization of principal rooms about the open court and lobby; a future wing to the north will complete the quadrangle. Children's library area is separate



Entrance lobby and display area, above and below, are enclosed by glass on two sides, affording a pleasant vista of the garden and reading lanai as one approaches the building from the street. Redwood ceiling, asphalt tile floor, natural koa and monkeypod





Hawaiiana Room, above, houses the rare book collection. Work room, right, is sequestered for serious study; is reached by shaded lanai facing the garden

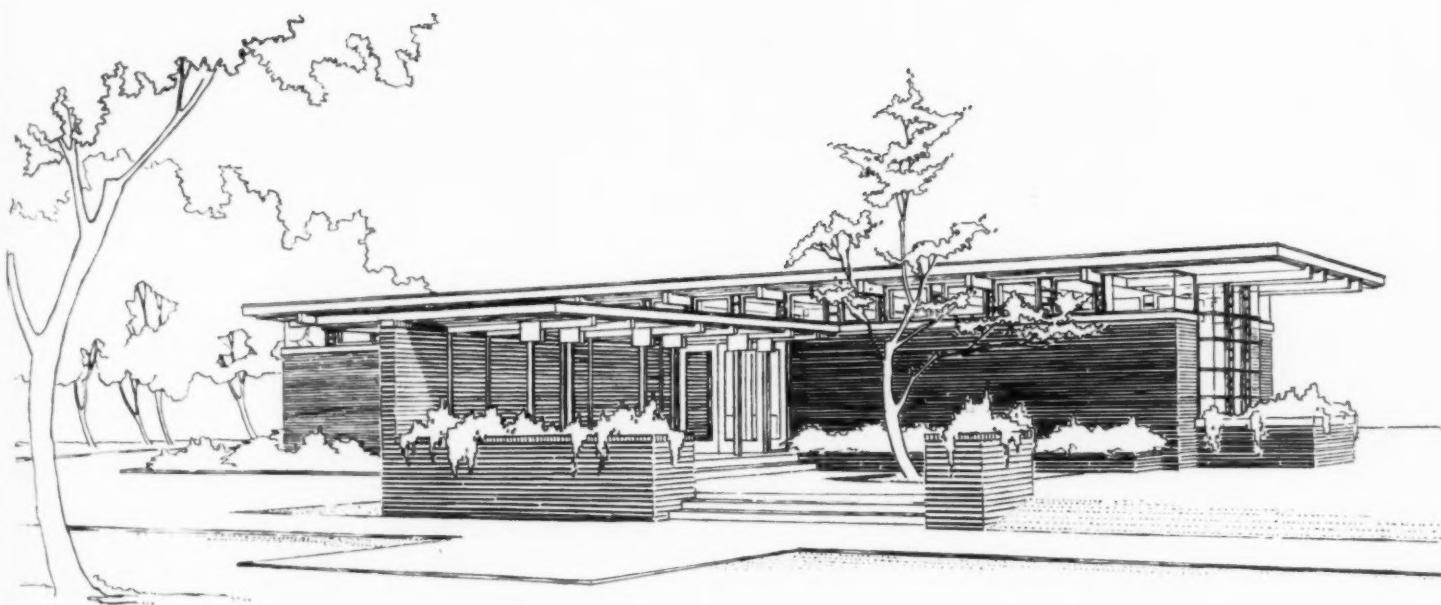
HAWAII COUNTY LIBRARY



R. Weller

PUBLIC LIBRARY, AURORA, COLO.

Victor Hornbein, Architect

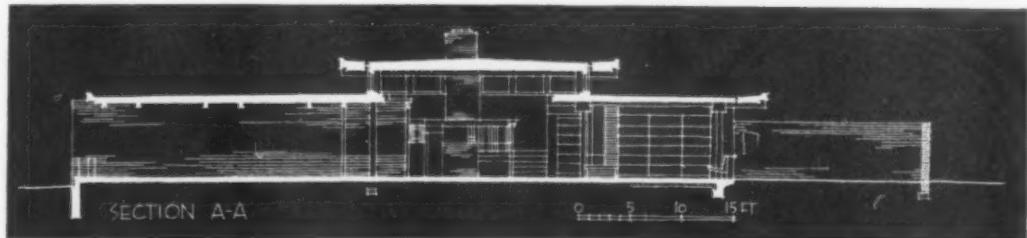


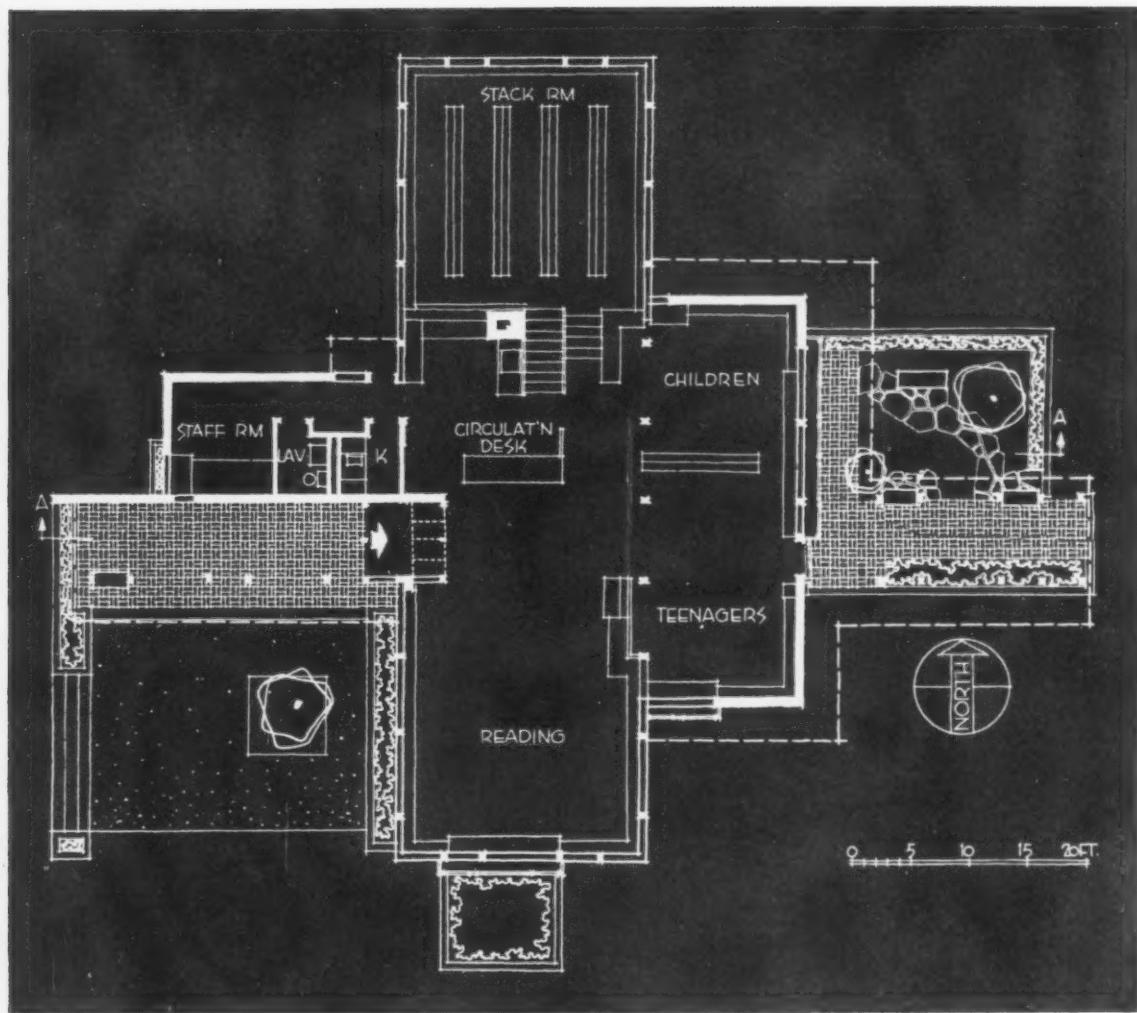
LOCATED OPPOSITE A PARK which will contain a city hall and fire station in the future, this structure is the first of a projected civic group to be built.

Aurora is a Denver suburb and has a population of 10,000, but is located near an Air Force base and an Army hospital; which situation materially increases the load on its community facilities. Seven years ago the Women's Club started a public library, ran it on a vol-

untary help basis, and managed by hard work to build up a collection of 10,000 volumes. The city assumed management only a few years ago, and at present employs nonprofessionally trained personnel.

The building will be faced with 12 by 2½-in. red brick; fascias will be painted blue-green; decorative elements of the columns will be painted vermilion; all interior wood will be oak in a natural finish.

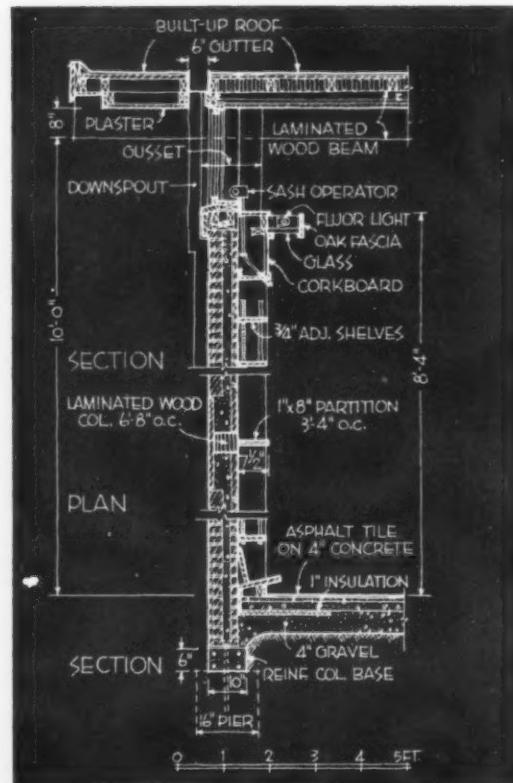


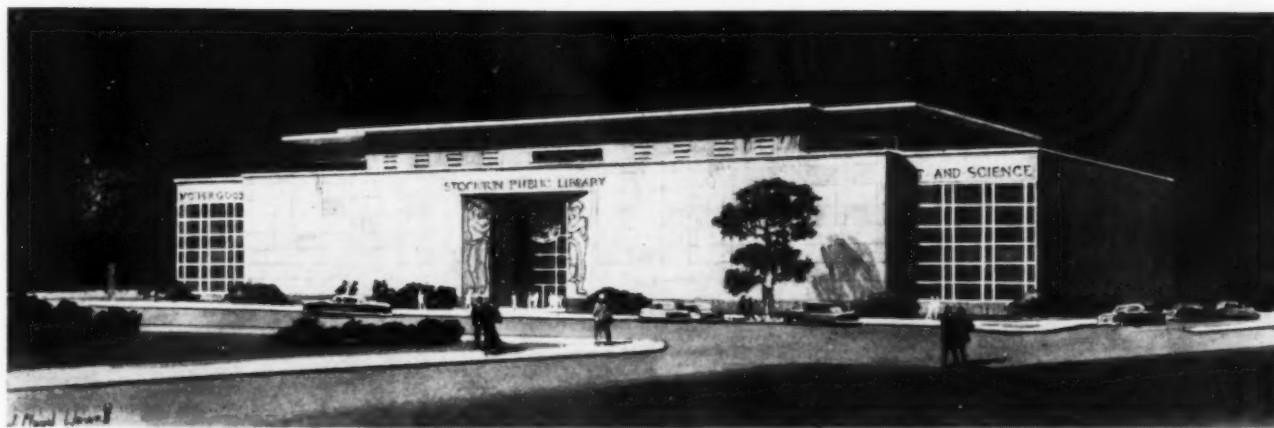


AURORA PUBLIC LIBRARY

Plan, above, is based on sound principles: desk parallel to entrance, backed-up by work rooms and book stacks; adult and teen-age areas adjoining; children's area defined but not separate; a pleasant outdoor reading garden for summer months; a mezzanine which will at present serve as a meeting place for community activities, in the future will house more stacks for the growing collection

Typical wall section, right, shows 7-ft high shelving topped by shaded continuous sash for daylighting, fluorescent tubes for night





NEW PUBLIC LIBRARY, STOCKTON, CALIF.

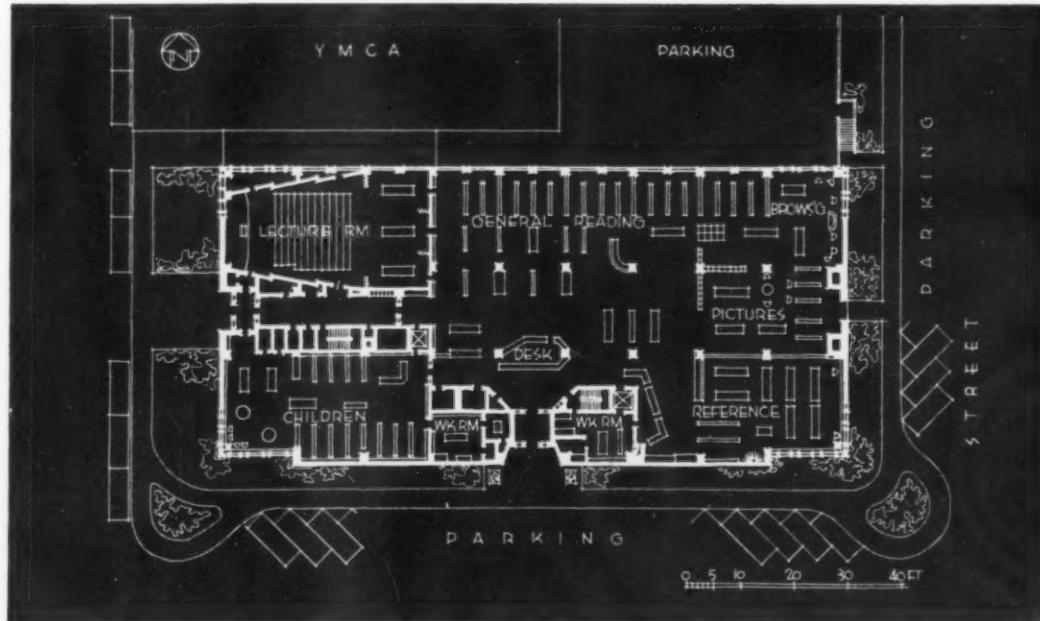
Peter L. Sala, Architect

Francis Keally, Consulting Architect

STOCKTON IS LOCATED only a few miles from the scene of the famous 1849 gold rush in a fertile farming district a scant 50 miles from San Francisco. The new public library there is now in working drawings stage—actual construction will start in a year or two.

The possibly conventional appearance of the building does not preclude incorporation in the plan of many of the principles discussed in the foregoing text. The public area is a large open space free of walls, the division into sections for reference, browsing, art, music, etc. being

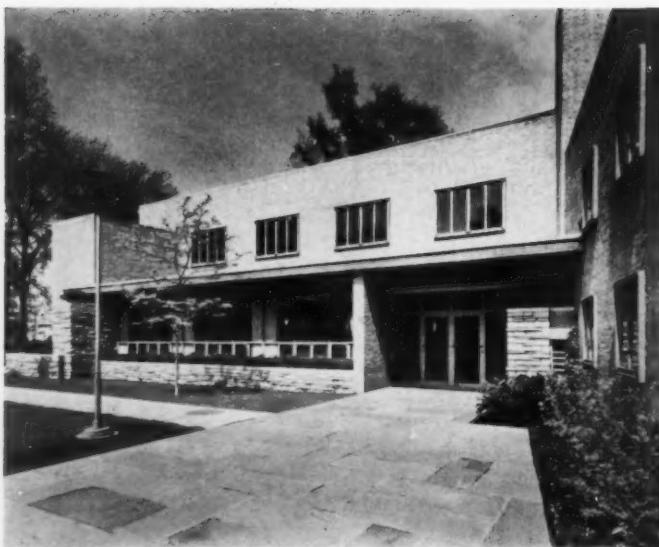
accomplished by low open bookshelves or movable screens. Large glass areas face the street. The control desk facing in several directions provides for maximum control with a minimum staff. Toilets are strategically placed. The browsing area is informal in character and in addition, the third-floor penthouse features a public smoking lounge as well as a terrace and dining room for the staff. The second floor is devoted to book processing and storage stacks, the area being ample to accommodate expansion as it occurs.





PUBLIC LIBRARY, WILMETTE, ILL.

*Holabird & Root & Burgee, Architects
Alfred M. Githens, Consulting Architect*



A CHICAGO SUBURB of 18,200, Wilmette opened its new stone and tan brick library in 1951. The structure is planned to accommodate an eventual collection of 90,000 volumes as well as audio-visual material.

All main public areas are at one level, accessible from the street without steps. The plan comprises three principal areas roughly equal in extent; these are separated but not box-like in definition.

The two-story main stack room houses open bookshelves, a reading area, special sections for art and music and also a mezzanine for book collection growth, used at present for exhibits and committee meetings.

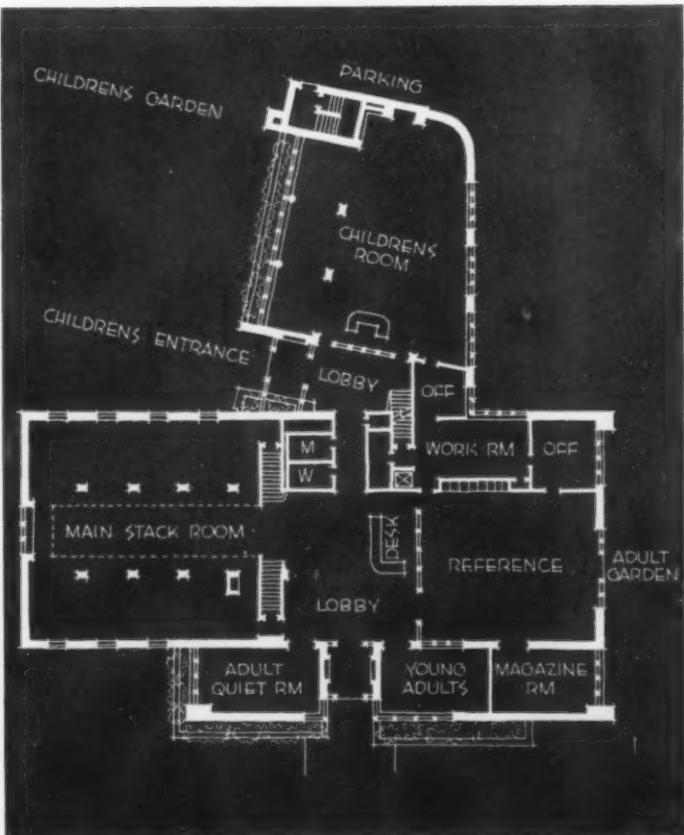
The teen-age and reference area is devoted especially to high school but also to general use. The adjoining periodical room contains a five-year accumulation of magazines for current history study.

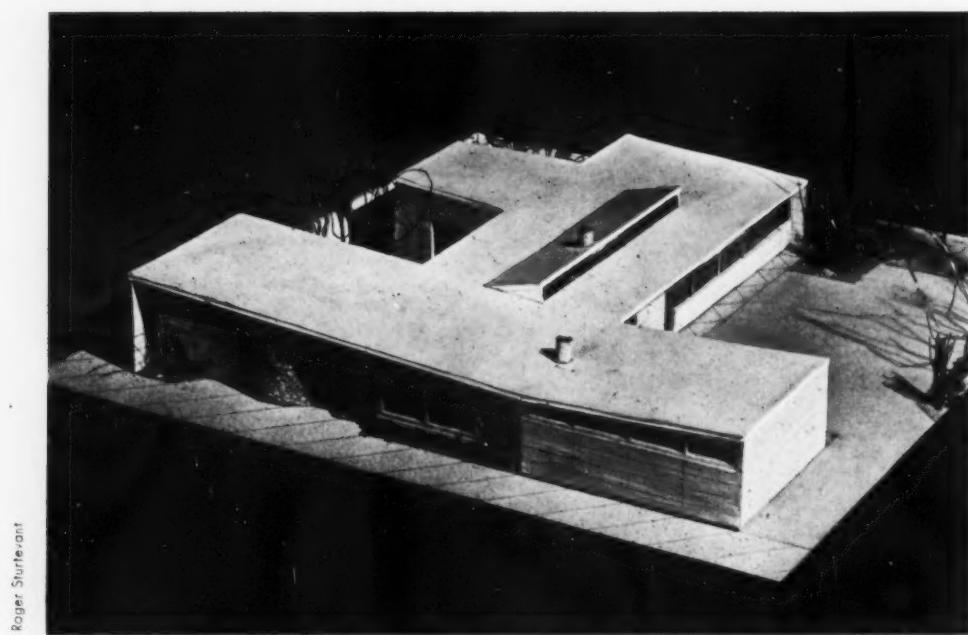
The children's wing is two stories in height, with the juvenile library space at ground-floor level and an auditorium for community use over.

Chicago Architectural Photography Co.



Left page, interior and exterior views of children's section. Above, control desk looking towards main adult entrance door, shown below





Roger Sturtevant

BISHOP, CALIF., BRANCH, INYO COUNTY LIBRARY

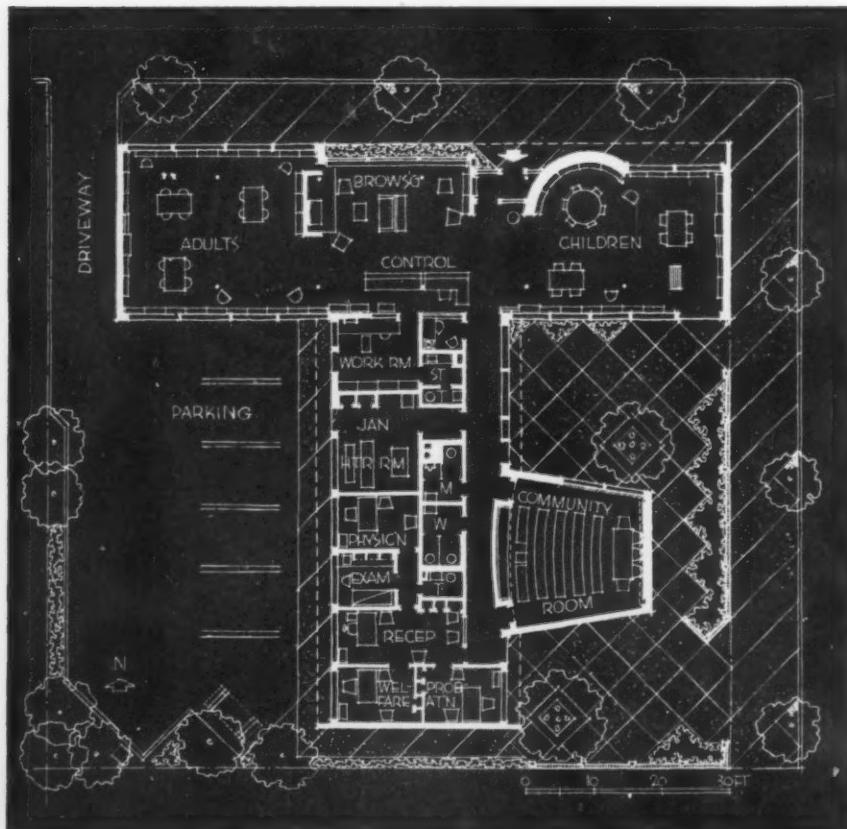
Francis Joseph McCarthy, Architect

BOOTH LIBRARY USERS and their new building in Bishop, a town in the Owens Valley high in the Sierras, will undergo temperatures ranging from 104 to -10 as well as the unhappy possibility of earthquake shock. These considerations led to an air conditioned structure with light steel frame and roof deck and a concrete slab on grade; the whole tied against lateral stresses. Walls will be concrete block slabs locally made; masonry will be local river boulders. The program called for the inclusion of the three following main functions:

1. An office section for county welfare, probation and medical departments. When these offices can occupy their own building, the space can become stacks or exhibit area.

2. The community room, seating 40, for various civic gatherings, meetings and motion picture showings.

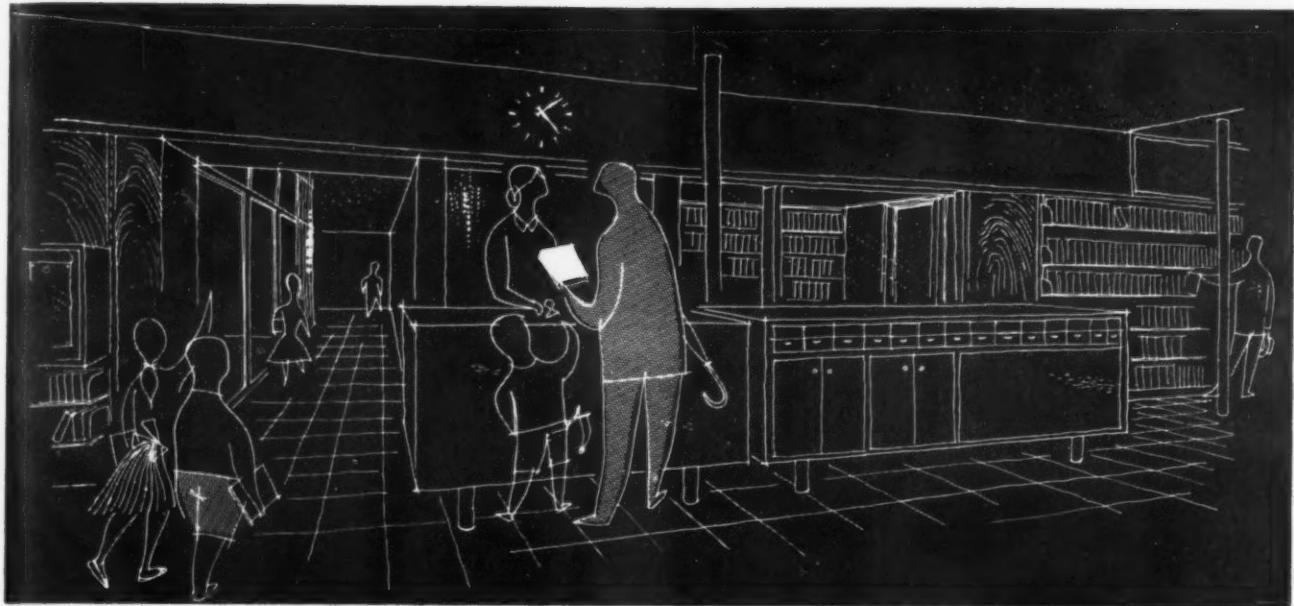
3. The library, with provisions for both browsing and study, grownups and children. The patio will serve for general outdoor reading and children's story hours. All fixtures and furnishings are architect-designed.



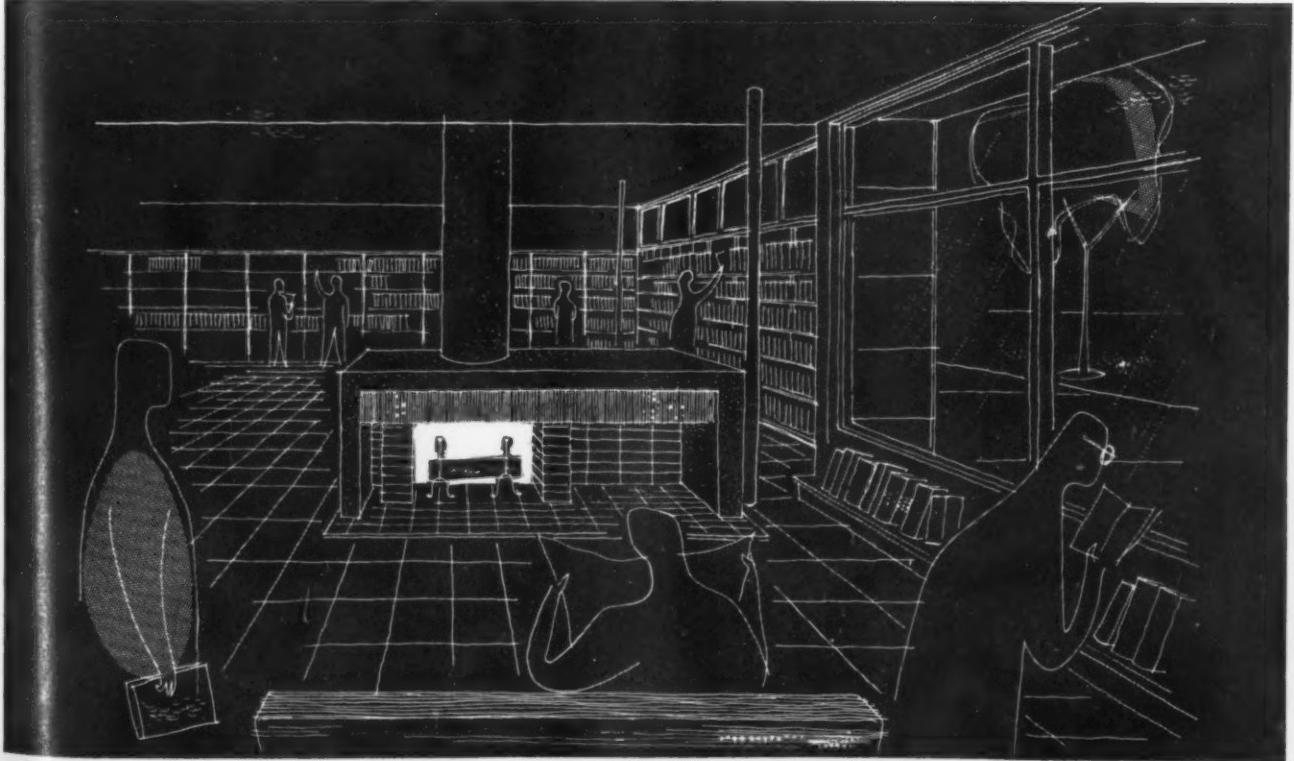
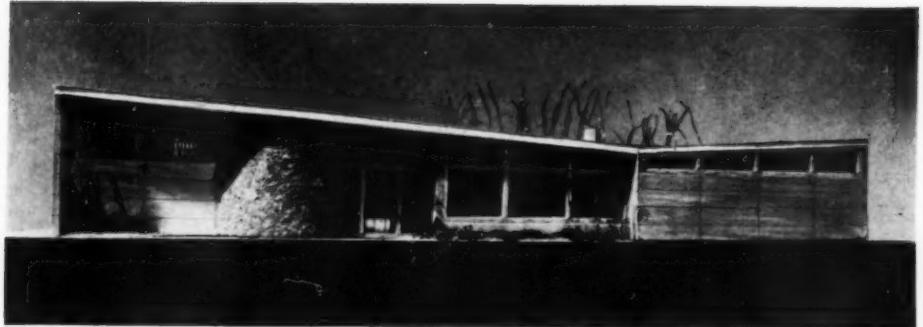
Plan, left, shows juxtaposition of the three main elements and their placement on the site

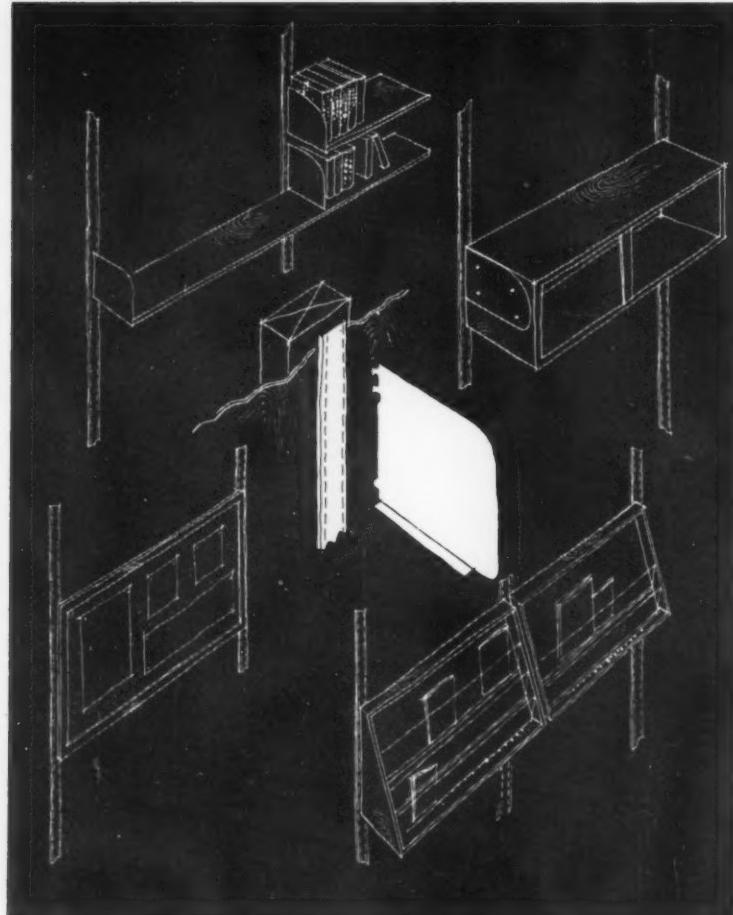
Top right, interior view from entrance looking toward control desk and work room beyond

Bottom right, browsing area, which features a fireplace; main adult reading area is beyond



Tom Ballenger, courtesy Jack McRoy





INYO COUNTY LIBRARY

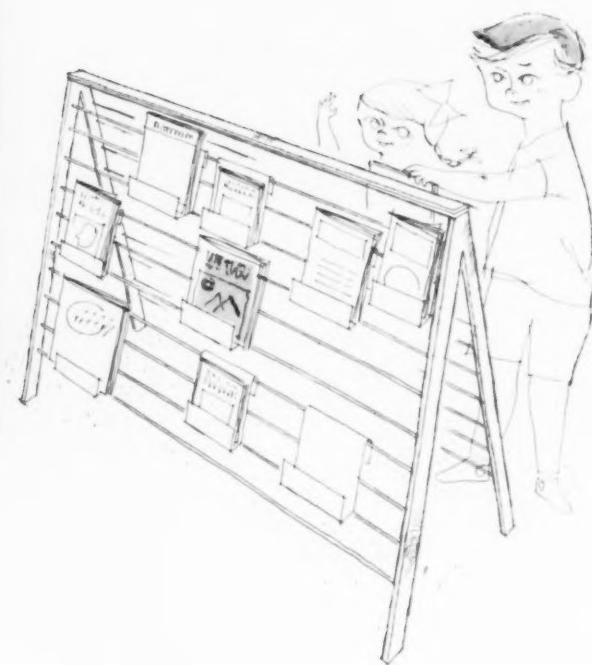
Tom Ballenger, courtesy Jock McKay

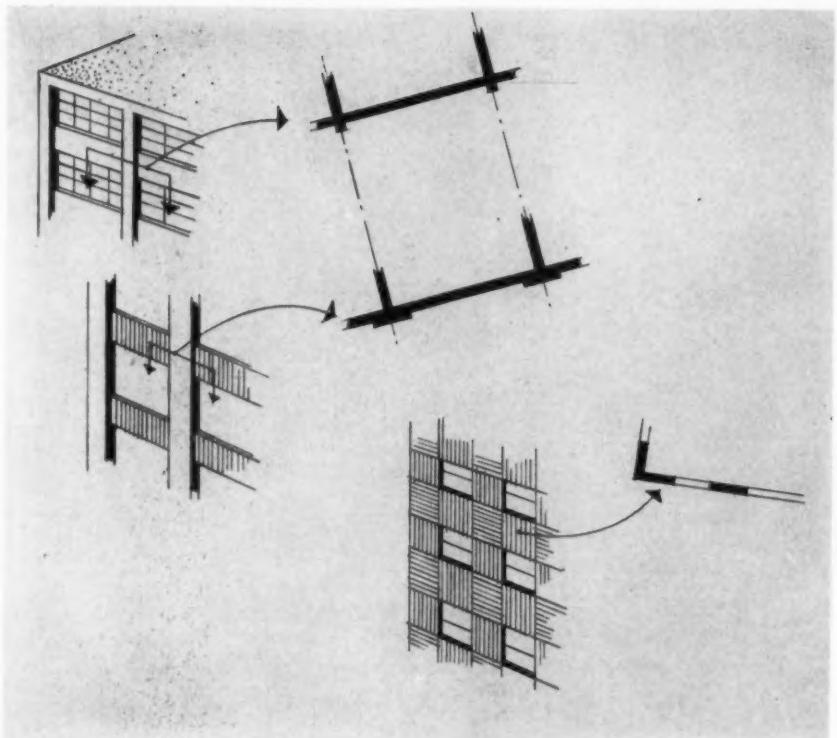


Ingenious detail, left, consists of double-slotted vertical strips on a 3-ft module to provide support for open bookshelves, glass-front display cases, sloping racks for periodicals or cork bulletin boards

Below, metal hangers on a series of rods support odd sized books and magazines

At bottom, main library area for children looking towards the curved masonry alcove





Windowless buildings of reinforced concrete would provide the greatest amount of protection against atomic blast at a cost little, if any, above that of existing construction. Appreciable, though more expensive and less effective, resistance is possible in windowed buildings. Exterior appearance need not be a bugaboo. There can be a variety of treatments: the right-hand building has an exterior concrete membrane pierced by windows (this is next best to windowless construction); the other sketches show how buildings having larger windows might look.

BLAST RESISTANT BUILDINGS

How Practical Are They?

By Boyd G. Anderson

Ammann & Whitney, Consulting Engineers

WITH OUR DEFENSE POTENTIAL closely related to the use of atomic weapons as indicated by widely publicized news stories and reports, it is only logical to expect our consideration of these weapons in case of all-out war, and retaliation, if not initiation in kind, by our enemy if used. This possibility was grimly emphasized recently when Department of Defense officials warned us to expect sudden and devastating atomic bomb attacks in case of such a war. It is inconceivable, therefore, that the safety of life, investment and productive facilities can be ignored in the face of such a threat.

Bomb Damage in Japan

The holocaust of Hiroshima and Nagasaki give an indication of possible effect of such attacks on the United States. A single bomb in each city resulted in approximately 130,000 deaths out of a one-half million total population. All except the strongest industrial

and commercial buildings were completely destroyed over an area of 4 square miles, with homes razed over a much larger area. This tragic and moving incident was followed in each case by complete chaos and a mass exodus of the population from the stricken cities. It is reasonable to expect that the more powerful weapons developed since that time would be equally disastrous in the more densely populated areas of the U. S.

Protection at Little Increased Cost

In view of the seriousness of this threat, it is important that steps be taken to minimize the effect of such an attack by producing as strong and as resistive new buildings as can be afforded economically and accepted functionally.

Obviously this does not mean that it will ever be possible to provide complete protection in all buildings, for the costs of stronger and stronger structures

erected to cope with weapons of increasing potency would be prohibitive for a competitive economic market. Furthermore, the Government certainly could not subsidize protection costs that would be greater than the probable loss that might be expected in a few local areas of attack.

Fortunately, however, the greatest amount of protection and the maximum reduction in the destruction caused by the blast can be effected at little increase in the cost. Through awareness of the more resistant types of construction and by alerting clients to advantages achieved at nominal costs, the architect can do much which in time will assure more bearable prospects for the future.

The Trend to Cellular Construction

While the bulk of existing construction consists of either load-bearing walls or skeleton and rigid frames with curtain walls, recent construction experience in Europe typified by the Spa Green Estate

apartments in London and by planning studies as described in various technical publications* have shown that conventional methods may not furnish the most logical and economical structural systems even without consideration of the blast problem.

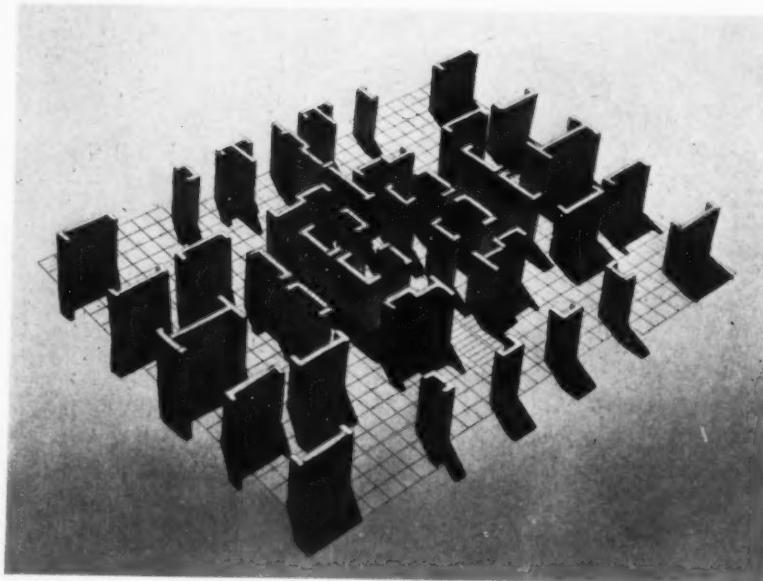
Instead, more efficient systems consisting of relatively light, high-strength walls of varied shape which combine structural and architectural functions can be used in place of the heavy bearing walls or the separate frames with added walls and partitions.

While this construction is similar in principle to the old bearing wall construction, the high-strength materials permit members thin and light enough to be controlled in thickness by thermal and sound insulation rather than structural considerations. Even in skyscraper construction where necessary thicknesses previously made the old bearing wall impractical, there is every reason to believe that building heights comparable to the tallest existing buildings are completely feasible using a high-strength wall construction.

In fact these taller structures might be constructed using reinforced concrete walls 10 to 12 in. or less in thickness, and they would have the advantage of being stronger and undergoing less motion under wind and other lateral loads than similar buildings supported by skeleton frame construction. With the high-strength structural wall system capable of developing resistance at a greater rate than the masonry partitions, maintenance problems due to wind and other loads would be greatly reduced.

The most advantageous and efficient use of building materials to resist atom bomb forces would of course utilize such

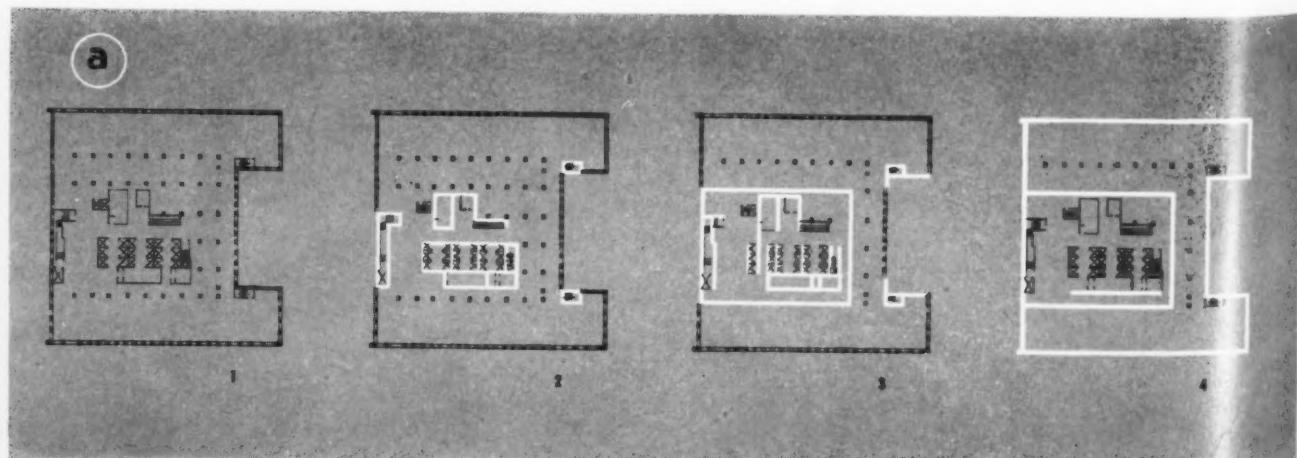
*Such as ARCHITECTURAL RECORD, Jan. 1951, p. 134.



This recently developed structural system, used for apartment houses in Budapest, Hungary, and shown in model form here, can provide a high degree of blast resistance. Relatively thin, reinforced concrete walls of varied shape combine structural and architectural functions (See ARCHITECTURAL RECORD, Jan. 1951). Architects Olgyay and Olgyay



Although "box-frame" construction, which has been used in Denmark, England and elsewhere, was selected for its merits of sound control, construction standardization and absence of projections into usable areas, it can be easily adapted to blast resistant buildings.¹





Above: "box-frame" construction was recently used for a series of apartment buildings in London, England. (Photo: The Architectural Review, Oct. 1952)

Figs **a**, **b**: sketches 2, 3 and 4 show the most promising types of blast resistant construction, in order of increasing resistance, as applied to two existing multi-story buildings. The No. 2 plans have shear walls replacing fixed interior walls—there is no sacrifice of flexibility or windows. Fig **b**, 3 has, in addition, structural exterior walls, pierced by small windows. No. 4 buildings are windowless; dashes indicate possible walls at corridors

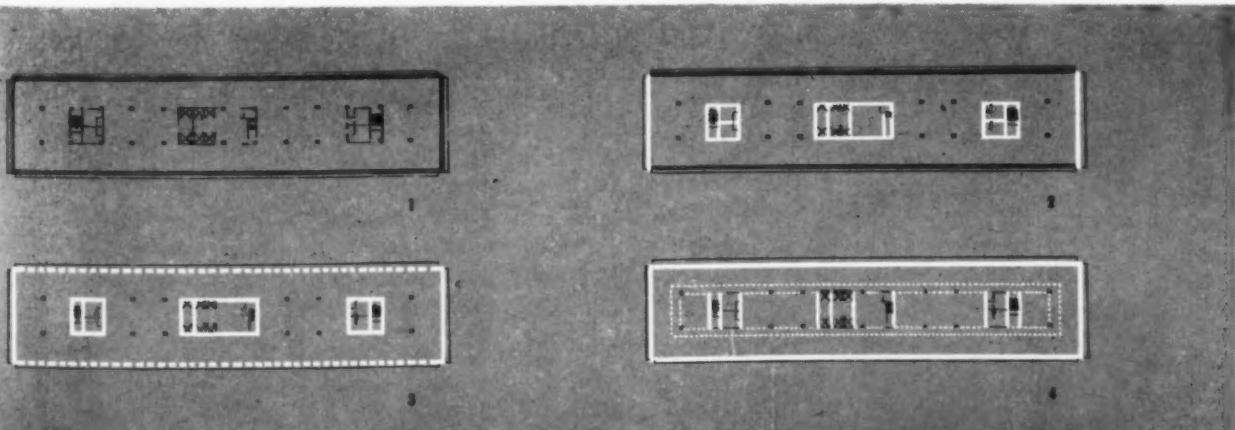
high strength walls as a structural membrane. By curving or folding the membrane into large cellular shapes common to use in modern aircraft, ship or other construction, strength adequate to resist intense lateral forces could be provided without necessity of fantastic thicknesses and unit strength in the members. Nor would such framing necessarily result in restrictions in usable floor area. In fact one of the expressed advantages of similar construction now, using horizontal and vertical slabs as floors and walls, is that projecting columns and beams are eliminated from the useful floor area.

Strengthening Conventional Framing

While conventional frames also can be strengthened to a certain extent by care in the selection of materials and details, the possibilities of developing any degree of resistance are much more limited than they are in membrane construction. For example, if the strength of the frame were doubled — which may be the limit that can be accomplished for nominal increased cost through minor increases in strength, and improved connections of conventional frame construction — the radius of destruction would only be decreased by 20 to 25 per cent, and the future usefulness of the structure after exposure to the blast would be limited due to large distortions.

Furthermore, the curtain walls and interior of the structure would be subject to extensive damage by the blast forces. Though this increase in resistance is appreciable and should not be overlooked, the load capacity possible for any given cost is much less than is inherent in the membrane construction.

Conventional load bearing wall construction is weak against atomic blast forces and would result in extensive



casualties due to collapse, flying debris and fire.

Windowless Buildings

Windows represent a luxury in blast resistant construction. The reasons for the desirability of eliminating windows are several:

(1) Unless windows or fragile wall areas are carried to the extreme of including practically the entire wall and partition areas, the relief in load caused by openings in the first wall is largely negated by the suction and pressures on the succeeding walls, and there is little difference in the load impulse transmitted to the structure in buildings with and without windows.

(2) Failure of the walls or glazed areas also will expose personnel and building contents to blast and fire damage during and after the explosion. This damage may be as critical in many respects as the destruction of structure.

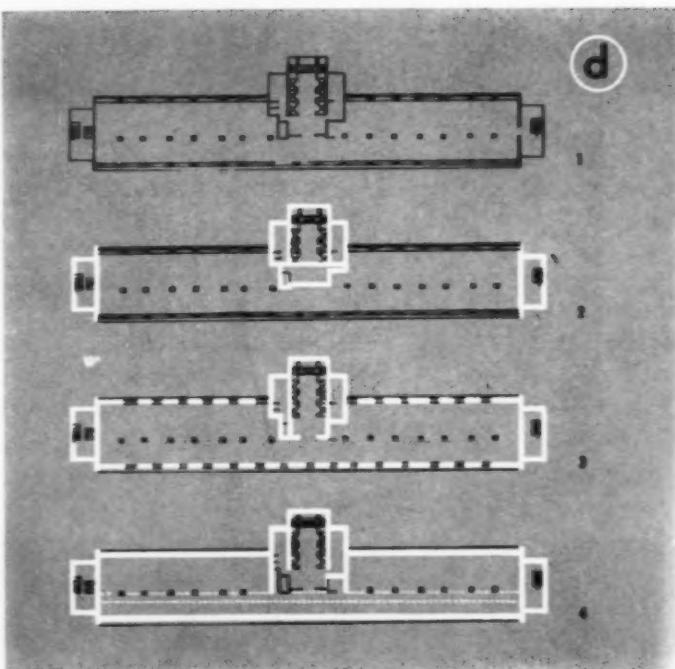
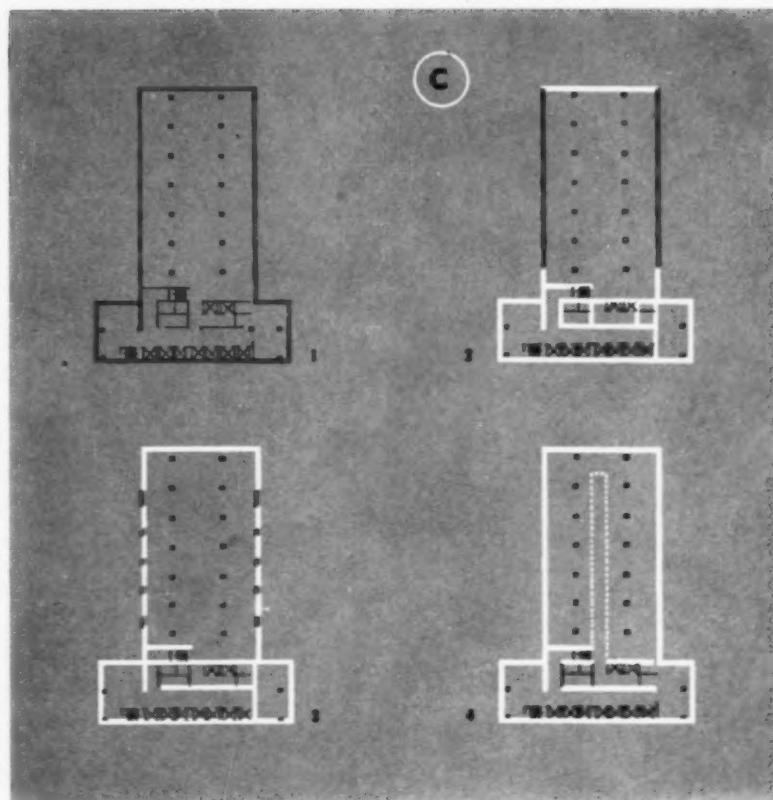
(3) Differing partition layouts on various floors also may delay the passage of the shock wave on certain floors resulting in a temporary but sufficient unbalance in the pressures acting above and below the floors to cause damage to the floors throughout the building.

(4) Furthermore, the exterior walls are the most economical part of the building to use as blast resisting members because of their excellent geometrical position and because more money would be saved if conventional curtain walls were replaced by blast resistant walls than if conventional interior partitions were replaced instead.

The acceptability of windowless buildings by the prospective user is of course a prime factor. However, the psychological factor is better considered later along with the cost and degree of blast protection.

In the series of sketches on pp. 174-176 are a number of examples of the most promising types of blast resistant construction applied to plans of existing multi-story structures selected at random. Though this substitution would result in strong and tough structures compared to present construction, straight substitution of windowless membrane construction in present plans probably would be unlikely for several reasons.

In the first place many lending agencies and particularly the Government are already concerned with protection of investment in view of the possible large scale losses in the event of an atomic explosion. Their typical statisti-



Figs c, d: blast resistant construction, in order of increasing resistance, applied to existing multi-story buildings. The same procedure for substituting structural walls for nonstructural has been used as with Figs a, b. The dashes on Nos. 4 indicate possible structural partitions at corridors

cal approach to the problem would specify that average investment concentration over widespread areas be maintained at reasonably low levels both to discourage attack and to minimize losses. Such dispersion, involuntary to the architect and client, may be closer to actuality than commonly realized and this may eventually nullify to some extent the usefulness of skyscraper-type buildings.

Furthermore, with artificial lighting and air conditioning dictated by the windowless exterior walls, the buildings might be logically expected to decrease in verticality and expand in floor area. Given a constant total floor area, an increase in area per floor will increase the depth, and hence strength of the building; while decreasing the height will reduce the exposed areas subject to the blast force and loads on the wall.

As a result, the total cost for a given degree of blast protection might be expected to increase only slightly with floor area but at a much higher rate for the same floor area distributed in a vertical direction. While this increase in cost will vary widely with the size and arrangement of buildings, the cost may easily be as much as several dollars per sq ft higher for a tower building as compared to a low building having a square plan.

Buildings with Windows

If windowless buildings are considered unacceptable for any reason, appreciable, though more expensive and far less effective resistance, also can be provided in windowed buildings. This protection can be developed by use of an exterior membrane pierced by windows and/or by substitution of structural walls for conventional partitions at stair and elevator wells and at utility passages where they will not interfere with functional use of the floor area. Structural walls also may be used for firewalls and partitions which are fixed in position. The structural interior walls, in this case, would serve the multi-purpose of supporting the building and acting as a closure screen and personnel shelter for the occupants.

In apartment and finger-type buildings such as schools, hospitals and buildings housing small offices, where the interior membrane walls are closely spaced, the framing would be similar to the "box-frame" construction used in Denmark, England and elsewhere. Box frame construction was selected in existing construction for sound control, construction standardization and

absence of projections into the usable areas rather than for blast resistance, but it will provide a high degree lateral resistance and is easily adaptable to blast resistant construction. The no. 2 floor plan in illustrations **a-d** indicates possible arrangements providing a light structure which would cause little interference with the flexibility of the planning while still affording a much greater lateral strength than is possible in skeleton construction, unless these structural frames have excessively heavy members.

Special Structures

Factory-type buildings and auditoriums may be more difficult to strengthen due to the necessary clearances for cranes and for proper sight lines. Ordinarily these buildings consist of structural frames or arches spaced 16 to 30 ft on centers with subframing supporting a light curtain wall which encloses the structure and carries wind and snow loads to the heavier structural members. As the loads on the walls increase in intensity, the local and main framing becomes increasingly more massive and the advantage of dispersing the frames is largely lost.

In this case a more efficient arrangement might be achieved by combining the local and frame members into a single unit which will act as a continuous frame along the length of the wall as shown at the bottom of page 178 rather than by the usual manner of widely spaced frames supporting local wall areas.

The heavy wall framing needed to carry local loads to the spaced frames is thus used to carry both the local wall load and the over-all frame loads. However, factory buildings are frequently flanked by lean-tos or side bays containing offices and shops, and the high bay may be given greatest protection at least cost if cellular construction is used to frame the side bays and to support the main structure as well. This would be the reverse of the conventional procedure of using the heavy main frames to provide lateral support for light lean-to framing.

Costs

The cost of blast protection will of course depend on the degree of protection desired and on the freedom of planning permitted. However, building costs with and without special blast resistant capacity may be compared by considering methods of construction now in use. Replacement of conventional

curtain walls and the structural framing supporting these walls by architectural reinforced concrete walls without windows would add the highest type protection at costs little if any above the costs of existing construction.

Substitution of structural walls for typical plastered block interior walls would be more expensive and might add up to 50 cents psf to the costs of the building. Strengthening of building frames to a point of utilizing available members at full efficiency might add a similar cost of 50 cents psf, while providing a much smaller amount of blast protection for the building and without providing a shelter area for the occupants.

Degree of Protection

The degree of protection furnished by the above means also will depend to a great extent on the structural freedom permitted in the design and on the configuration of the building; however, certain general estimates of resistance capacity may be made using more or less typical composite structures. It might be expected, for instance, that the strength of windowless membrane construction will be three or four times as great as frame buildings and the over-all effect of the disaster in turn might eventually be reduced to 30 or 40 per cent of that which might be expected at the present time.

The introduction of windows and restriction of allowable structural areas would reduce this resistance, though in most cases it would be considerably greater than the resistance obtained by a nominal increase in the cost of framed buildings.

By considering the nature of the blast forces in the design of frame buildings, the added frame strength achieved at nominal costs might double the effectiveness of the frames and reduce the critical damage on an over-all area to 65 per cent of that which may be expected using conventional frames. It should be realized that all comparisons are made against conventional frame buildings which are much more resistant to blast than most normal buildings found in an average city.

General Consideration Of Blast Resistant Design

It is apparent that the blast resistance of buildings can be improved in numerous ways. However, the greatest amount of protection at least cost would utilize the concept of windowless building which may not be readily acceptable

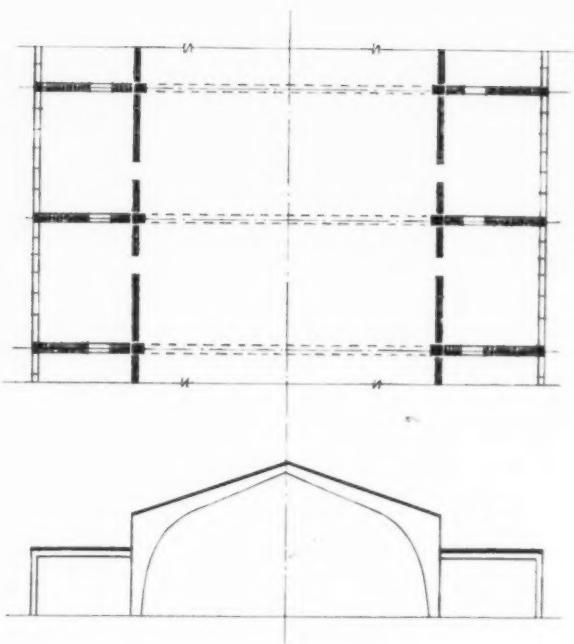
to either architects or clients. In view of the importance of eliminating windows, if possible, for blast resistance, the factors determining the necessity of windows should be given a healthy review.

The approach to the protection problem thus requires more than a comparison of costs between different wall and framing systems which might be used in present plans and buildings. As an economic problem, any added costs, unless subsidized by the Government, will reflect in added rental costs.

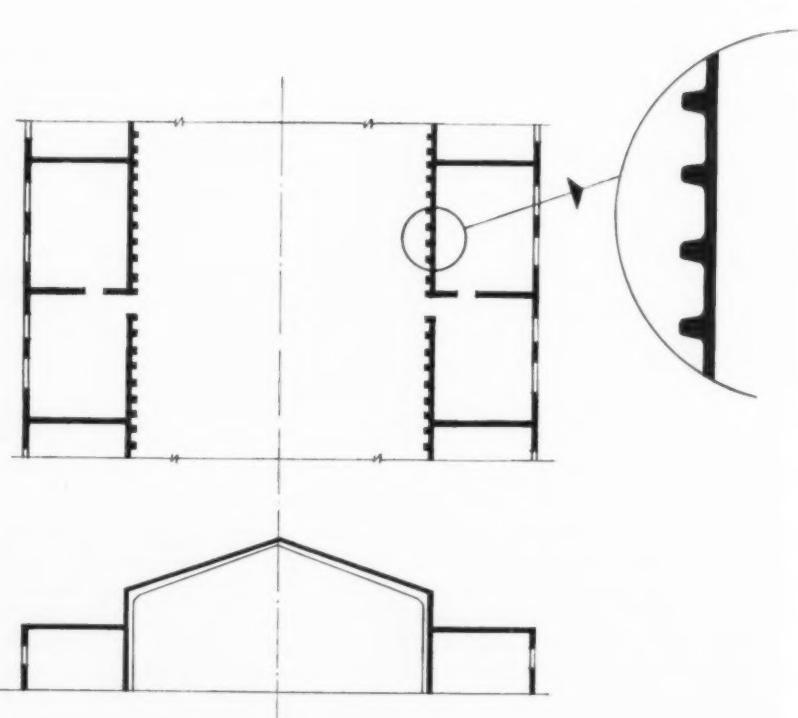
As shown by experience in the Japanese incidents, extensive or complete damage occurred to the contents of practically all buildings. This is illustrated by the damage of such relatively sturdy contents as machines housed in shops which were estimated as over 50 per cent destroyed or irreparably damaged by debris, fire and later exposure. This factor may influence the architectural planning, for while prospective tenants of a building might be adverse to paying added rental costs for a windowed building which would protect the structure and not the contents or occupants, they might consent to somewhat higher rental rates if better personnel relations could be obtained by offering security to the workers, and if added safety were furnished for the tenant's possessions.

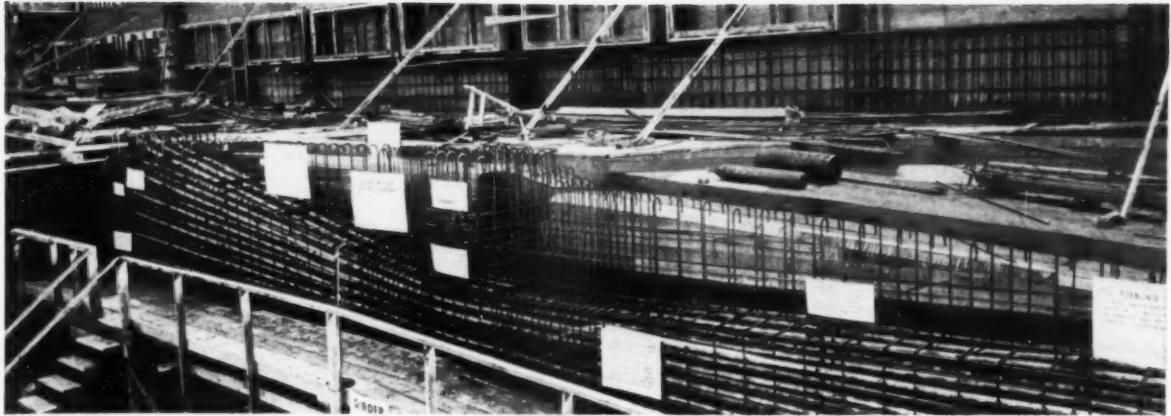
Protection of the tenant's investment and personnel necessitates the consideration of windowless buildings. If windows are left out and air conditioning is provided, the efficiency of the floor plan may change sufficiently to effect savings which would offset the added cost of the air conditioning. It is obvious that if air conditioning is contemplated, regardless of windows, the total costs would be reduced by the improved plan and better thermal insulation of the windowless construction. Heating, air conditioning, sound control and flexibility of light sources as a criteria for room arrangement hence offer particular sources for further study.

Considering the seemingly happy operation of existing windowless buildings such as department stores, even the extremes in blast resistant buildings can hardly be considered severe criteria until it is shown that such buildings would be less functional, less acceptable and more expensive than our present methods of construction.



Quite often industrial buildings consist of structural frames spaced 16 to 30 ft on centers with subframing supporting a light curtain wall (above). For blast resistant buildings, it would be better to combine local and frame members into a more efficient single unit which will act as a continuous frame (below), and to frame side bays in cellular concrete construction which also will support the main structure





Ready for pouring is the 62-ft long girder C, which is prestressed by means of 28 cables, shown in place. Cables will be prestressed to 125,000 psi

PRESTRESSED GIRDERS ELIMINATE COLUMNS TO FREE PARKING GARAGE ENTRANCE AREA

Barrett-Lick Garage, San Francisco, California

Ellison and King, Consulting Structural Engineers

Barrett and Hilp, General Contractors — Owners

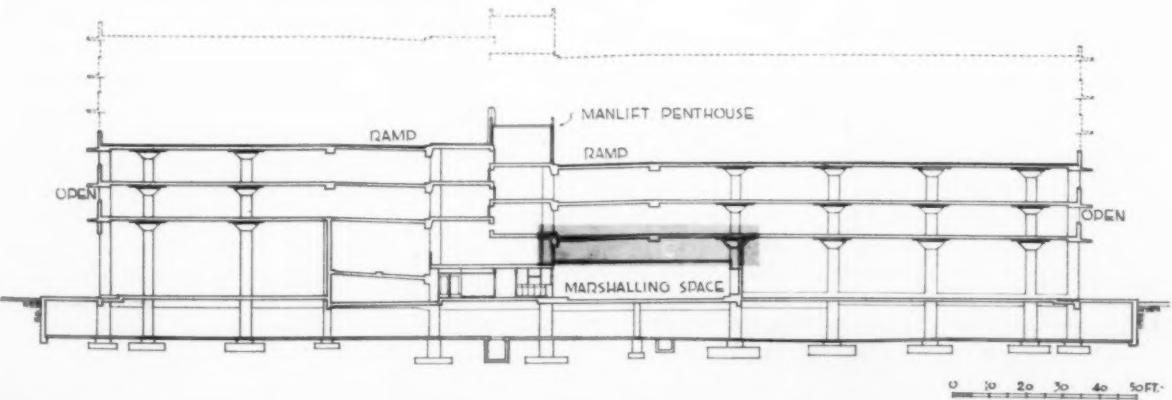
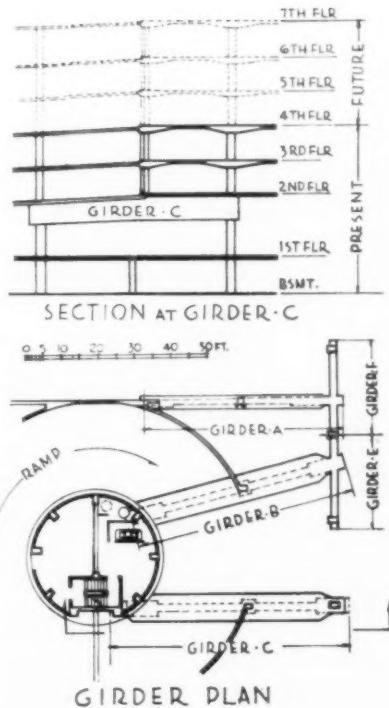
IN DOWNTOWN SAN FRANCISCO, construction is now under way on a three-story and basement parking garage, designed for the addition of three more stories later, in which heavy prestressed concrete girders make possible an open, unrestricted space in the entrance area to accommodate cars before they are taken up the ramp.

These girders, the engineers say, will be the heaviest prestressed concrete building girders in the world, as well as the heaviest prestressed girders in the United States, including bridge girders. In charge of the structural design was S. C. King, who died shortly after its completion, and collaborating with him was T. Y. Lin, both of Ellison & King.

In order to provide an open marshall space on the first floor in the entrance area, four columns from upper stories terminate at the second floor and are carried by prestressed girders spanning 51 to 62 ft. Because of the irregular shape of the site and the location of the center circular ramp, columns are staggered in alignment on the northern and southern halves of the building. Hence, two of the column-carrying girders, A and B, are supported by two continuous girders, E and F, at the northern ends.

Because of the heavy loads on the girders, the original plan was to use steel. However, when construction started on the building in August 1951,

Prestressed girders, at shaded area below, carry row of four columns of above floors to provide open area within the entrance. This section shows flat slabs, but analysis of haunched slabs (section at right) proved them better



use of steel was denied by NPA.

Ordinary reinforced concrete was considered next but preliminary calculations indicated members of such size and cost as to prohibit their use.

Ability to maintain adequate headroom without increasing the story height, together with savings in cost and critical materials, were the deciding factors in the choice of prestressed concrete.

The cost estimate below indicates a saving of \$6000 (more than 10 per cent) over the original structural steel design:

Total for prestressed concrete girders	\$18,000
Alternate design, using structural steel girders	\$50,400
Fireproofing	3,600
Total for structural steel	\$54,000
Saving	\$ 6,000

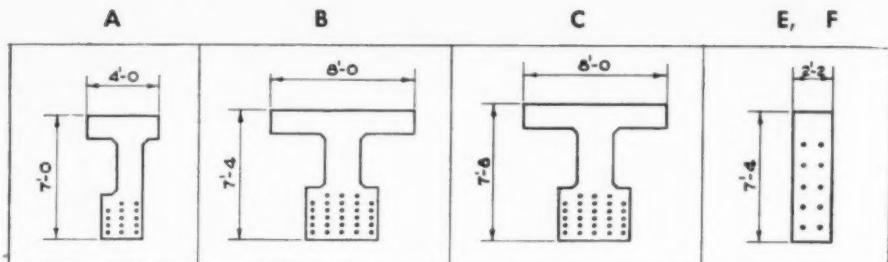
The incorporation of two unusual features in the girders has resulted in considerable cost reductions: (1) The tops of the girders are integrated with the floor slabs, utilizing the floor slabs as top flanges and obtaining maximum possible depths for the girders. (2) Tensioning of the girders is postponed until all upper floors in the present scheme have been poured. This makes it possible to carry the present dead loads without compression in the top fibers, thus leaving the maximum load-carrying capacity for any live or future loads.

Prestressing Design

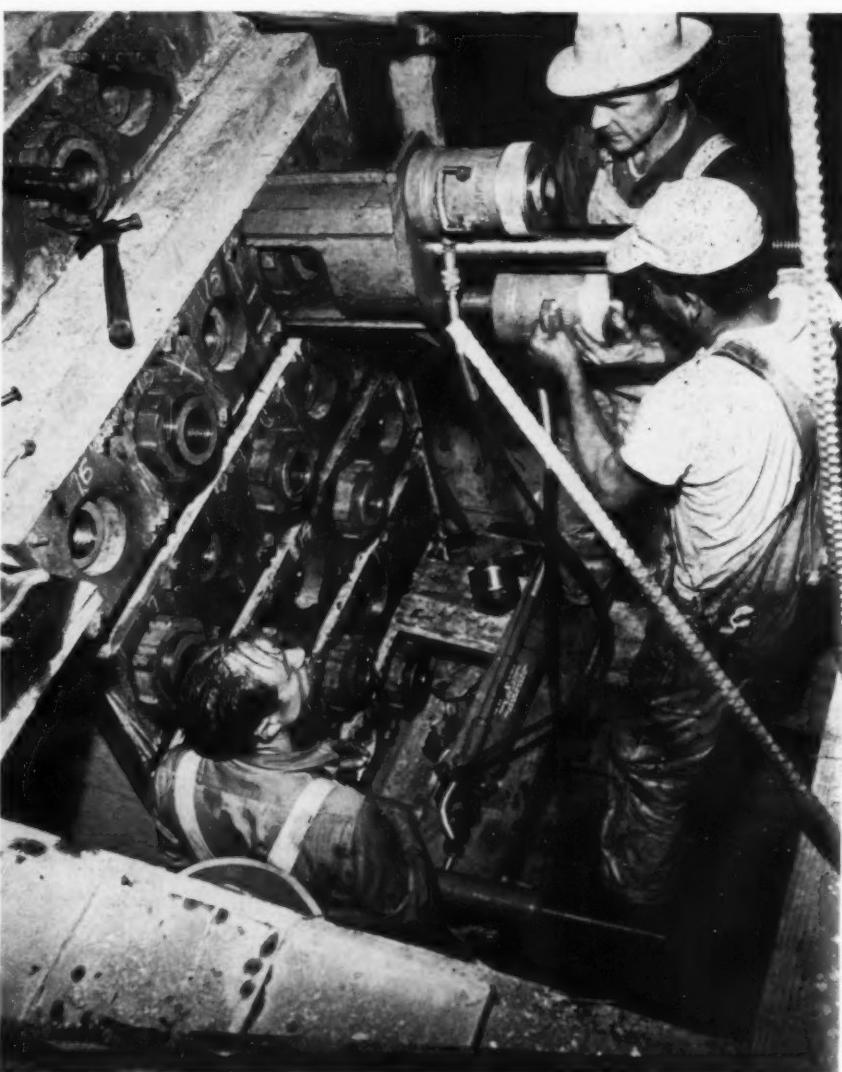
Three long girders (A, B and C) are designed as simple spans, each carrying a heavy concentrated load approximately at midspan, together with additional uniform load along the length. For the design of the midspan section, two critical conditions were investigated.

The first critical condition occurs immediately after completion of the prestressing. At this stage the top fiber is under zero stress while the bottom fiber has a maximum compressive stress of 2200 psi. This maximum compressive stress will be gradually reduced as loss of prestress takes place, and also as additional dead and live loads are applied. The top fibers, although under zero stress immediately after prestressing, will be under some compression as soon as loss of prestress takes place.

The second critical loading condition will occur when the future three stories are added and the full live load is on the structure. Prestress in the cables would then be reduced from 125,000 psi



Above: sections at midspan of prestressed girders. Below: mounting two 60-ton jacks to apply a pull of 85 tons on one of the 1½-in. cables in the girder. Total pressure on girder will be 2380 tons. Hand pump operates jacks



Don Bosco

to 105,000 psi. Under such conditions the maximum compressive stress will occur at the top fibers and will have a maximum of only 1800 psi.

The two continuous spans, girders E and F, could have been designed of ordinary reinforced concrete if it were not for the heavy shear in them.

One of the unique problems encountered in prestressed concrete, especially in this building, is the design for strains

induced by prestressing. In order to avoid dissipation of prestress and overstressing of adjoining members under prestressing, all the slabs and walls surrounding the girders are severed from the girders. Thus the girder concrete will be poured as a distinct unit, separated almost completely from the rest of the building with the separating strips doweled and concreted after prestressing has taken place.

RADIOISOTOPE FACILITIES FOR THE GENERAL HOSPITAL

By Samuel C. Ingraham, M. D.¹, U. S. Public Health Service

Editor's Note: The planning and engineering data presented here cover requirements for the type of radioisotope facility that is likely to find widest application in general hospitals. The planning of special facilities for medical research, teaching and possible new developments in medical uses of radioisotopes is an individual design problem, and beyond the scope of this paper.

NOW THAT RADIOACTIVE MATERIALS are being used regularly in a number of hospitals for certain clinical tests and for treatment of selected patients, there is a need for a new special area in hospital design — the radioisotope facility.

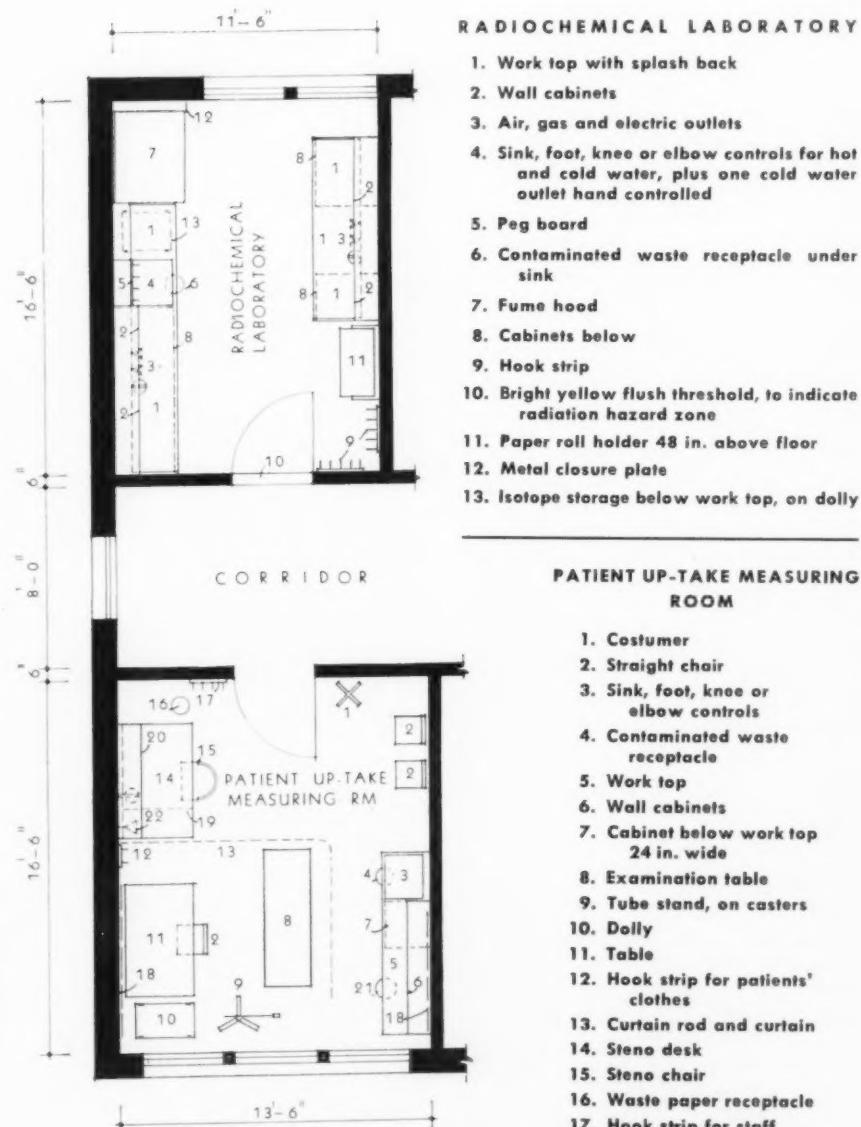
Location

It is operationally more convenient to locate the radioisotope facility in or near the department which assumes responsibility for it. This will facilitate sharing of staff duties and permit common use of patient waiting, examination and dressing spaces.

Most radioisotope patients are ambulatory and many of them can be handled as out-patients. For this reason, there should be convenient access from the street and elevators. Traffic is most easily controlled and the hazard of personnel exposure is kept to a minimum at an exterior corner or end of a corridor. At the present time, there appears to be no need to require special bed areas for routine, radioisotope in-patients.

Patient and staff toilet facilities should be convenient to the radioisotope area, but special toilet facilities for routine radioisotope patients are not necessary. Installation of a special, emergency shower bath is not believed to be obligatory, but reasonable access to a shower stall is desirable to provide for the unlikely but possible contingency of a radioisotope spill involving personnel contamination.

¹Assistant Chief, Radiological Health Branch, Division of Engineering Resources. Prepared under the direction of John W. Cronin, M.D., Chief, Division of Hospital Facilities, Bureau of Medical Services, and Otis L. Anderson, M.C., Chief, Bureau of State Services, Public Health Service, in cooperation with Isotope Division, Atomic Energy Commission, Oak Ridge, Tenn.



RADIOISOTOPE FACILITIES IN THE GENERAL HOSPITAL

0 1 2 3 4 FEET Plan by W. R. Taylor

The relative cost and ease of running services to the radioisotope facility must be considered in selecting its location.

The Basic Facility

Design and construction of the radioisotope area must provide for necessary radiation shielding to maintain personnel exposures below 0.3 roentgen per week,* for preparation of patient doses of isotopes, for ease of clean-up in case of accidental spill of radioactive material, and for measurement of absorption of the isotopes by the patient. The minimum, basic, adequate facility for use of radioisotopes in the hospital consists of two rooms: a **radiochemistry laboratory** and a **patient uptake-measuring room**.

In the radiochemistry laboratory, the shipments of radioisotopes are received and stored, the proper dilutions for patient dosage are prepared, clinical specimens are prepared for examination, the doses of radioisotopes are given to the patients, and glassware, linens, clinical specimens and other items contaminated with radioisotopes are cleaned, held for decay of the radioactivity or stored prior to disposition.

In the patient uptake-measuring room, the patient uptake of radioactive substance is measured and the radioactive content of clinical specimens is determined.

As the use of radioisotopes will probably increase, the hospital should plan for economical expansion of the radioisotope facility. By adding a second patient uptake-measuring room, the hospital can double the patient capacity of the basic radioisotope facility. (At this stage of expansion of the basic facility, consideration should be given also to the possible addition of an electronics and low-level assay room.)

Radiochemistry Laboratory

Plan. The radiochemistry laboratory plan incorporates such elementary principles as: equipment located on the side walls, permitting window space with heating outlets below; separate work tops for patient dose and clinical specimen preparation; high level radiation area (hood (7) on the drawing) and isotope storage (13) on an outside wall, far removed from radiation measurement area; separation from patient uptake-measurement room by a corridor to

minimize disturbance of radiation measurements due to stock solutions of radioisotopes stored in the laboratory.

Radioisotopes may be stored in shipping pots and shielded containers on the dolly (13) or behind lead bricks inside the hood.** The dolly can be parked under the work-top near the hood, or the hood base can be designed to receive the dolly. The suggested dolly is a method of storing which permits the radioisotopes technician to use the entire work surface freely rather than cluttering it with bulky storage pots.

Contaminated dry wastes may be collected in the waste container (6) and stored temporarily under the sink (4) or in the hood base behind lead bricks. The wall and base cabinets (2) and (8) are provided to store equipment and miscellaneous supplies. The aisle space indicated is wider than usual for a laboratory. The additional space is to provide a work area large enough for a patient's litter and the medical treatment team needed to inject patients with radiogold-198.

Easy access to a roll of diaper paper † is provided by holder (11) mounted on the wall so as to allow space for occasional truck parking below. Separate hook strips are provided for staff gowns and street clothes.

The need for extensive built-in shielding is avoided by judicious use of shielded storage pots, movable shields of lead bricks within the exhaust hood as needed, and location of the hood on an outside wall. If the hood location is changed so the area on the far side of the partition behind it is an occupied area, concrete, lead or other shielding material should be added to the partition to assure protection of the occupants of that area.

Heating and Ventilating. Although room temperature is not critical, some ventilation is necessary for human comfort. The exhaust fan being connected to the hood and the fact that air from this room should not be recirculated because of possible radioisotope contamination indicates that the room should be maintained under a lower pressure than adjoining areas. Negative pressures in this room must be avoided to prevent possible back-drafts down the hood exhaust stack. If climatic conditions warrant, consideration might be given to installation of a separate, outside air

intake or make-up to avoid exhausting excessive amounts of air from the other parts of the building.

Patient Uptake-Measuring Room

The patient uptake-measuring room is divided into three main areas — waiting, clerical and clinical.

The small patient load of this facility cannot justify a separate waiting room. The waiting area, to the right of the door, is not intended for the waiting patient, but rather for a person accompanying an out-patient.

Records can be kept in a file drawer of the stenographer's desk (14) or a file may be installed in the vacant space at the right of the desk.

The table (11) provides work space for the clerical duties of the radioisotopes technician so he need not remain unnecessarily in the radiochemistry laboratory near the stored radioactive substances. Some physicians like to have X-ray film illuminators located on or above the table for viewing films related to the patient's treatment. Work-top (5) provides a space to assemble equipment; and storage cabinets (6), above, furnish space to keep spare parts.

One radiation measurement instrument (scaler) and lead-shielded Geiger-Mueller tube or scintillation detector for assaying low activity samples could be mounted on this work-top near the window. The second radiation measurement instrument (scaler), for mobile use, can be mounted on the dolly (10). The tube stand (9) provides a simple means of supporting the second, shielded Geiger-Mueller tube or scintillation detector and may be eliminated if an alternative method of support is provided. The plug-in strips (18) on both walls make possible the use of short leads and facilitate the operation of equipment. The suggested curtain arrangement (13) permits use of the work-top (5) without disturbing the privacy of the patient, and shields preparations or treatment techniques from unauthorized observers. A cabinet for linen storage (7) is desirable.

Because of the sensitivity of the radiation measuring instruments housed in this room, it should not be immediately adjacent to X-ray machines or radium storage areas. In existing hospitals, the suitability of an area can be assayed by prolonged background measurements made under full operating conditions.

Heating and Air Conditioning. The heating system may be any of the

(Continued on page 196)

* The roentgen is the unit of measure for gamma and X-radiation. 0.3 roentgen per week of the whole body exposure is the recommended maximum permissible dose.

** Shielding provided by the containers must be sufficient to maintain personnel exposures below the maximum permissible dose of 0.3 roentgen per week.
† Diaper paper is a type of absorbent paper with one side treated to be impervious to moisture. This paper is used for easily replaceable protection of the work-tops and the working surface inside the exhaust hood.

PRODUCTS for Better Building



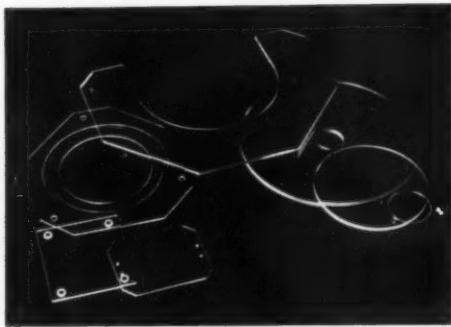
Cast Transparent Plastic Sheet

Employing a thermosetting liquid monomer plastic developed by the Pittsburgh Plate Glass Co. and known as CR-39, the Cast Optics Corp. is now producing CR-39 transparent plastic sheet, an optically clear rigid sheet reported to feature unusual resistance to abrasion, heat and chemical solvents. A similar product is manufactured by the Homalite Corp. and is being marketed as *Homalite CR-39*.

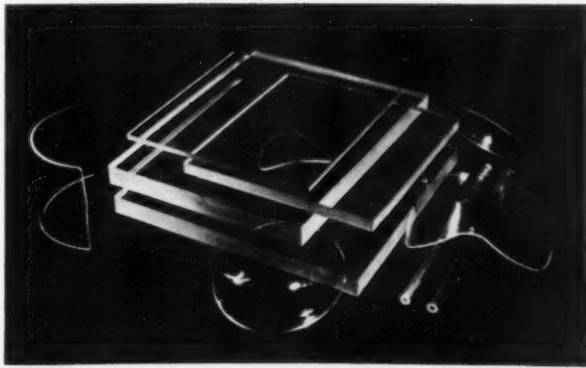
The sheet is said to possess extremely high clarity and to have surfaces comparable to polished plate glass in their smoothness, luster and chemical resistance. It is reported to be intermediate between polished plate glass and the better grades of thermoplastics in its resistance to abrasion, wear and weathering. Its molecular structure eliminates cracking, crazing and checking. In all, the sheet is said to offer important advantages over many transparent plastics, except for applications requiring severely curved surface contours.

Applications for the product cover a wide range, since it can be used in flat panel sheets or cut and formed in shapes suitable for windshields, instrument panels, covers, enclosures, lenses, plaques and other products. Architecturally, it may be employed as a glazing material or in applications such as the swimming pool canopy illustrated above. Cast Optics Corp., 1 Post Rd., Riverside, Conn.; Homalite Corp., 11-13 Brookside Dr., Wilmington, Del.

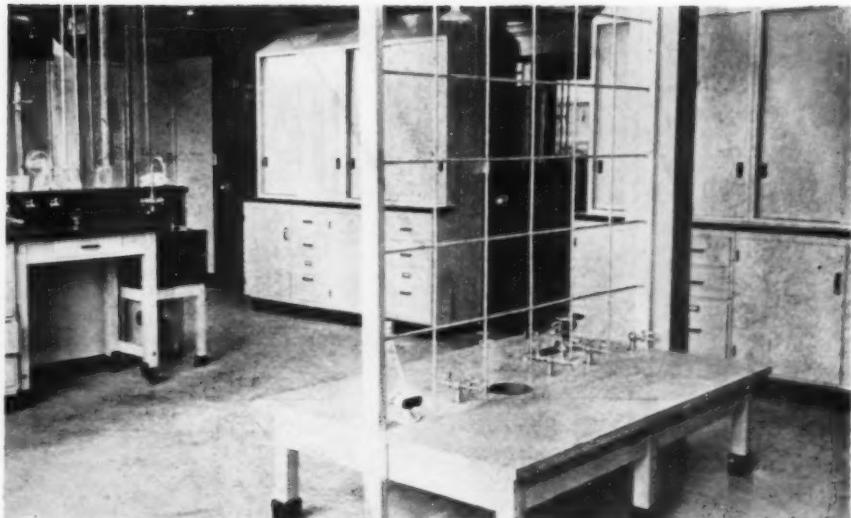
(Continued on page 200)



Transparent plastic sheet used as glazing material in swimming pool canopy, exterior at left, interior below. Can also be cut to special shapes, as above and at bottom, in several thicknesses



LITERATURE FOR THE OFFICE



Among layouts illustrated in planning guide, left, is the laboratory shown at right

Laboratory Planning Guide

Better Laboratory Planning. Prepared especially to aid architects in planning laboratory facilities in schools, hospitals and industrial laboratories, this booklet is a collaborative effort embodying the experience of a number of leading companies in the laboratory equipment field. Factors underlying good laboratory planning are discussed and illustrated with photographs of typical installations for a variety of requirements. 28 pp., illus. Laboratory Equipment Section, Scientific Apparatus Makers Assn., 20 N. Wacker Dr., Chicago 6, Ill.

Face Brick and Tile

Finest in Face Brick and Tile. Booklet presents illustrations of many patterns available, showing color differences along with the varied textural effects and giving a description of each. Details of interlocking tile are also included for 6- and 8-in. tile, and photographs of installations in several types of construction are given. Specifications are included along with weights and dimensions and the number of units required per sq ft of wall. 12 pp., illus. Hebron Brick Co., Hebron, N. D.

*Other product information in Sweet's File, 1952.

Bar System Steel For Prestressed Concrete

Stressteel Manual. One of the best examples of technical product literature design in a long time is this manual which discusses the Stressteel tensioning unit for prestressed concrete — a steel bar of extremely high strength, threaded on the ends for an anchorage assembly, consisting of a nut, a washer and a small steel plate.

The Stressteel bar was developed in England specifically for prestressed concrete construction and for strengthening and repairing existing steel and concrete structures. The bar is said to be the only large-diameter steel which approximates the high tensile strength of small-diameter high carbon wire.

A series of easily understood sketches brightens up the section on advantages and applications of the unit. The design section takes the basic principles of prestressing and gives an outline of 11 steps to follow, demonstrated by an example of using the bars in the design of a concrete "I" section girder.

Components are described and listed, and test results given in the section on materials. Specifications and construction procedures round out the booklet. 60 pp., illus. Stressteel Corp., 207 E. 37th St., New York 16, N. Y.

Insulation Material for Low Temperature Applications

Styrofoam. Booklet describes the properties of this insulation material, giving principles of proper installation on masonry walls, wood wall construction, self-supporting partitions, concrete floors and ceilings, wood floors and ceilings, suspended ceilings and insulated roofs. Information on how to apply adhesives and finishes to the material is also included. Chapters on the insulating of vehicles such as trucks, refrigerated cars, ship holds, tanks, etc. is given, and booklet is illustrated with photographs and drawings. Engineering data includes thermal and physical properties, water absorption and water vapor transmission. 24 pp., illus. The Dow Chemical Co., Midland, Mich.

Pipe Fittings

Fabricated Fittings by Naylor, Bulletin No. 525. Brochure contains data on standard and special fabricated fittings for lightweight pipe. Illustrations of special fabrications designed to save time and labor and reduce material costs in modernizing piping systems are also included. 4 pp., illus. Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.

(Continued on page 216)

METAL LATH MEMBRANE FIREPROOFING—4

Presented through the cooperation of Metal Lath Manufacturers' Association

"Double Hung" Ceilings

Costs can often be reduced with "double hung" ceilings by selecting the right combination that will also perform necessary functions like sound-conditioning, fireproofing, thermal insulation and air distribution. The price of these features installed separately can be more than the cost of two ceilings.

The first ceiling is placed below the floor and structural steel. It consists of a combination fireproofing, sound-absorbing and thermal insulating material like sprayed fiber applied on metal lath. A second ceiling of perforated metal acoustic pans is suspended below the air-conditioning ducts and other utilities.

By having the fireproofing material double as the sound-absorbing element, the usual mineral wool batts behind the metal pans may be eliminated. The air-conditioning ducts open directly into the plenum chamber formed by the two ceilings and the whole perforated pan system acts as a giant air diffuser. Anemostats are eliminated.

Cellular steel floors and steel beams have a four-hour fire rating when protected with sprayed fiber $1\frac{1}{8}$ in. thick on metal lath. An official noise reduction coefficient rating of .80 has been awarded sprayed-on ceilings when applied $\frac{1}{2}$ in. thick on metal lath. Asbestos and mineral wool are well known for their insulating qualities, and one manufacturer of sprayed fiber advertises a "K" Factor of .27 for his product.

Vermiculite acoustic plastic is another sound-absorbing material which has a fireproofing rating of 4 hrs for cellular steel floors and beams. Tests at the National Bureau of Standards show a noise reduction coefficient of .65 for this construction.

Design data for air flow through a perforated metal pan ceiling is usually available from the manufacturer.

Fireproofing for Steel Joists

In addition to protecting the structural steel framing, membrane fireproofing can make possible the use of modern lightweight floors in fire-resistant buildings. Many of the popular types of floors, including steel joists, precast concrete or cellular steel panels and steel plate floors, require an insulating, protective ceiling to qualify for a fire rating.

Under ASTM testing, a floor must meet the following requirements for the period of its fire rating when exposed to fire from beneath: it cannot collapse under design loading; it must prevent the passage of heat, flame or gases hot enough to ignite cotton; and the average temperature on the unexposed side cannot rise more than 250 F.

Ratings shown here (TABLE C) for steel joists are based on fire tests con-

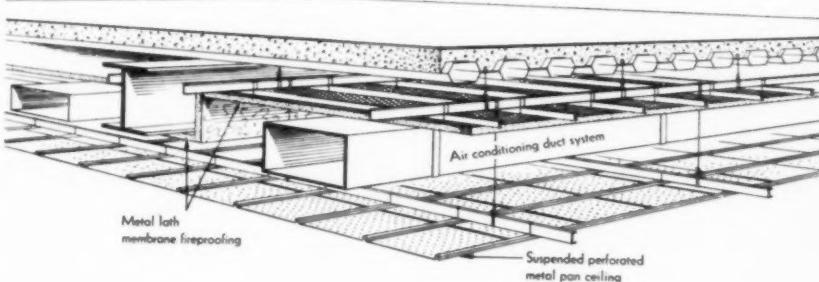
ducted at the National Bureau of Standards and listed in "Technical Report on Building Materials 44." They apply to floors supported on open-web, pressed steel or light rolled steel joists and American standard or heavier rolled beams which are designed in accordance with the recommendations of the American Institute of Steel Construction.

These ratings are applicable whether the metal lath ceilings are attached, furred or suspended below the joists. Lath must be of the appropriate type and weight for the spacing of the joists or furring channels.

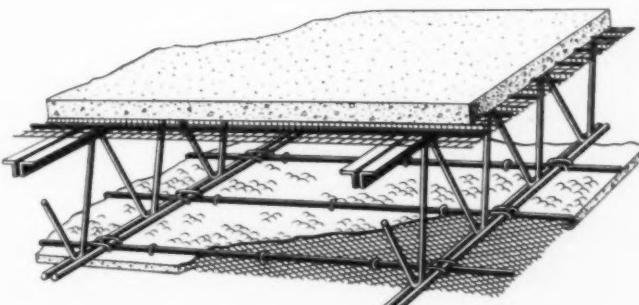
Wood Nailers

Wood sleepers or nailers for a wood floor may be embedded in a top slab provided they are separated from the top of the steel joists by the minimum thickness of concrete or gypsum specified in TABLE D.

TYPICAL "DOUBLE HUNG" CEILING DETAIL



TYPICAL STEEL JOIST FIREPROOFING





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DECORATIVE PANELING
WITH TREMENDOUS
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METAL LATH MEMBRANE FIREPROOFING-5

Presented through the cooperation of Metal Lath Manufacturers' Association

Metal Lath Centering

Metal lath is a good centering for concrete slabs over steel joists; no supplementary bridging is necessary

with such centering as it requires no stretching, does not twist or deform joists when loaded with wet concrete.

Sheets are readily clipped or tied to supporting members. Besides serv-

ing as a rigid form, metal lath reinforces the concrete slab to give allowable floor loads which usually exceed the structural limits of supporting steel members. (TABLE E.)

TABLE C

STEEL JOISTS	Fire Resistance Rating	Floor Slab Construction	Metal Lath Membrane Fireproofing
			1" gypsum-vermiculite plaster 100:2, 100:3
			1" neat wood-fibered gypsum plaster 3/4" gypsum-vermiculite plaster 100:2, 100:3
			1" neat wood-fibered gypsum plaster 3/4" gypsum-vermiculite plaster 100:2, 100:3
			1" sprayed fiber
			3/4" sprayed fiber
			3/4" gypsum-sanded plaster 1:2, 1:3
			3/8" sprayed fiber
			3/4" gypsum-sanded plaster 1:2, 1:3 3/4" Portland cement plaster 1:2, 1:3 with 15 lbs hydrated lime and 3 lbs asbestos fiber per bag of cement

TABLE D

With wood nailers embedded in top slab, for fire rating of:	Separate from steel joists by min. concrete thickness of:
4 hours	1 1/8"
3 hours	1 1/8"
2 1/2 hours	1 1/8"
2 hours	1 1/8"
1 1/2 hours	1"

TABLE E

Type and Weight of Metal Lath Centering	Thickness of Slab	Safe Superimposed Loads (lbs per sq ft)			
		Span	19"	24"	36"
3/8" Rib lath weighing 3.4 lbs per sq yd	2"		380	238	
	2 1/2"		479	300	
	3"		578	362	
3/4" Rib lath weighing 4.0 lbs per sq yd	2"		433	271	
	2 1/2"		544	340	
	3"		625	412	
3/4" Rib lath weighing .60 lbs per sq ft	2"				325
	2 1/2"				422
	3"				518

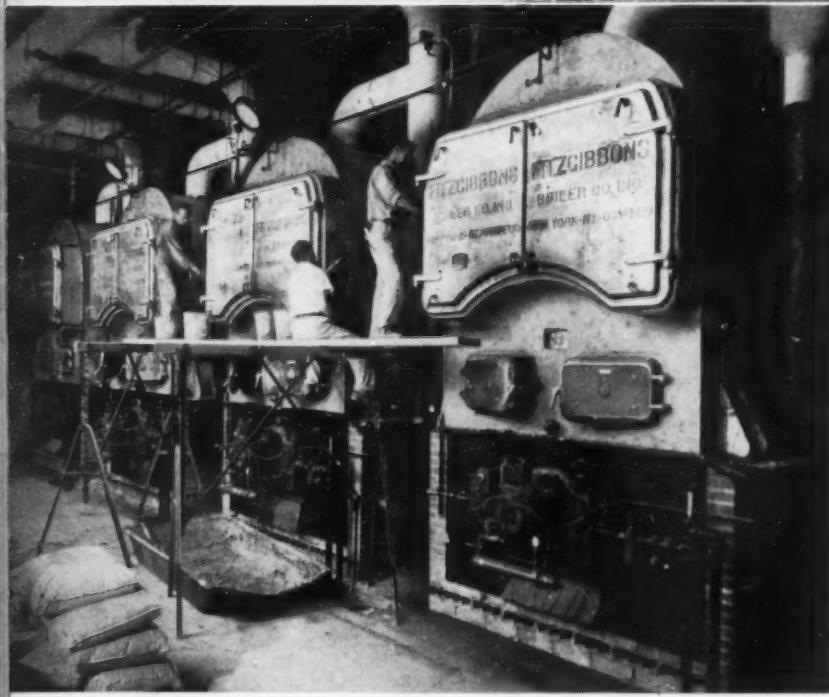
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Here are the four Fitzgibbons "D" Type boilers, each one rated for 30,360 sq. ft. steam, in the East Providence High School. The photo shows lagging being applied. "D" Type boilers are available in sizes from 3650 sq. ft. steam, to 42,500 sq. ft. E.D.R. rating (S.B.I.) Types for oil, gas, stoker and hand fired coal. Full specifications and data in the "D" Type Bulletin, on request.

HERE IS ANOTHER of the many up-to-the-minute schools that enjoy the economy and abundant heating comfort of Fitzgibbons Steel boilers. Four Fitzgibbons "D" Type boilers handle the heating job with ease in the most severe New England winter, and do it with the outstanding fuel savings for which these boilers are famed in schools, colleges, and institutional buildings throughout the nation. School boards everywhere have learned that "the best boiler buy is Fitzgibbons."



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STAINLESS STEEL-1

Presented through the courtesy of the Committee of Stainless Steel Producers, American Iron and Steel Institute

Use of Stainless Steel In Design

Its characteristics put stainless steel into a separate category of sheet metal work; properties are sufficiently different from other architectural metals to influence design techniques.

Briefly, stainless steel is stronger, stiffer, harder, and has a higher melting temperature than any of the non-ferrous metals. It is more weather-resistant than galvanized steel. Stainless is most often left unpainted and uncoated. It costs more per pound than many of the other metals.

All these factors affect the way stainless steel is employed in archi-

tectural designs. Here are some of the results:

- Thin sheets and strip are most used.
- Rigid members are produced by forming, not by using thick sections.
- Most joints are welded, screwed or seamed.
- Stainless often covers and protects other materials.

Use of Chromium or Chromium-Nickel

There has been a vast increase in use of Type 430, 17 percent chromium stainless. Before, Type 302, 18-8 chromium-nickel stainless had been employed almost universally because

of its easy fabrication and general availability. Although Type 430 was used in the automotive field and was recommended to architects for interior work, it had gained relatively little recognition in the building fields.

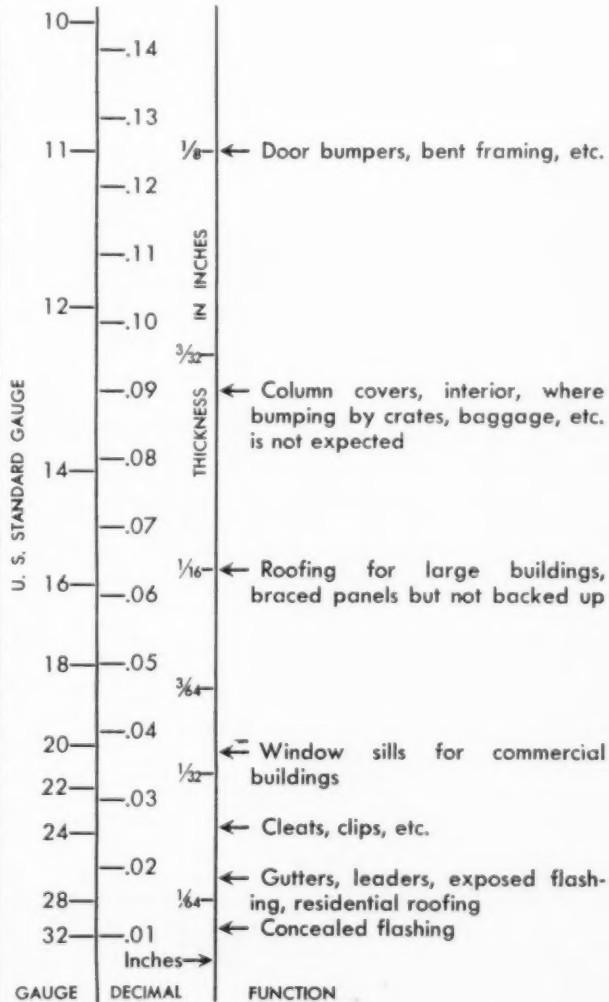
Today, great military and industrial demands for nickel have forced architects and designers to become familiar with the qualities of Type 430. Its corrosion resistance, slightly less than that of Type 302, has been studied carefully. Conclusions are that, while some extra precautions may be entailed, Type 430 stainless steel can be used for practically all kinds of architectural metal work.

APPROXIMATE STAINLESS STEEL THICKNESSES GENERALLY USED

Curtain walls,
spandrels,
mullions,
above
street
level

Street level
column covers,
fascia panels,
mullions,
pilasters—
stiffened with
braces, but not
completely backed up

- Roll-formed long, self-supporting members
- Formed & braces for stiffness, supported at edges
- Backed up by other material →





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MILCOR* Housing Base

Cuts both material and installation costs on metal lath or gypsum lath solid-plaster partitions, furred or masonry walls

Eliminates need for base screed — Flush-type metal base acts as trim and also forms a ground for plaster. Straight, true edges join base neatly with floor and wall surface.

Applied with clips — Clips support base and also secure the studs or gypsum lath. Supplied to fit standard 2½" and 3" bases.

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M-110

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• NEW YORK 17, N. Y. — 230 Park Ave. • ST. LOUIS 10, MO. — 4215 Clayton Ave.

STAINLESS STEEL-2

Presented through the courtesy of the Committee of Stainless Steel Producers, American Iron and Steel Institute

Stainless Exteriors

Stainless steel does not absorb moisture. It weathers well. It is light for its strength, and it stays strong through fire-test temperatures.

Stainless steel is used in exterior walls for different purposes:

1. Stock, roll-formed sections suitable for walls, roofs or decks are available in stainless. They have been

wind loads, extremely thin gauge metal can be specified and corresponding economies are gained. Stainless doesn't need extra material for a "corrosion allowance."

4. Buildings made from glass windows and glass spandrels require trim of another material. The easy cleaning quality of glass, which prompts this type of exterior, points to stainless steel as another easily cleaned

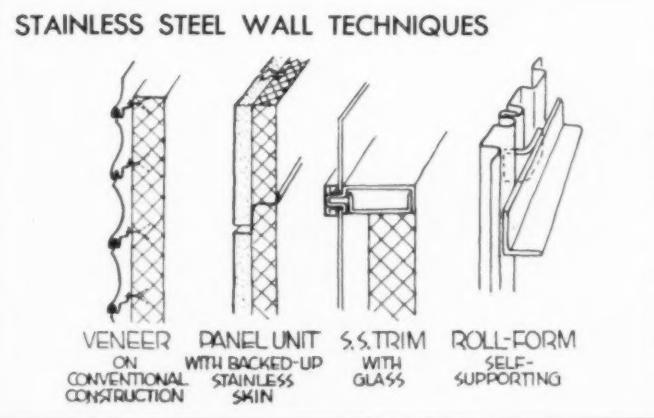
surface arises whenever a highly finished material is involved. Although used in thin sections, stainless is often formed into finished members that are designed to look massive and solid. As stainless is almost invariably found at a focal, eye-catching spot in the design, imperfections are seldom overlooked.

Wavy, "oilcan" appearance may result when a thin, flat surface is distorted by fasteners, welding (thermal strains), or very minor inaccuracies in fabrication. There are many things to do to prevent it.

First, break large flat areas into panels or strips. Second, bend the stainless pieces to form relatively rigid shapes — at least along one axis. Third, keep fasteners off the flat surfaces; put them beyond stiffening bends or returns.

Finally, if any of these general rules must be violated, it can probably be done without ill effect if considerably thicker metal or embossed, textured stainless stock is used.

It might also be added that a large area of bright metal, like the side of a stainless-steel covered skyscraper, might best have walls with many angled facets or curves to prevent development of a single concentrated glare from reflected sunlight.



used extensively for industrial buildings. With some insulation they have also served on office structures, but only (to date) in structures not subject to code fire-testing.

2. As external veneer over conventional construction, stainless steel plays many roles. It has been used as stamped spandrels, formed mullions, trim, fascia strips, bulkheads, etc., exposed to the weather. Advantages are gained in appearance and design, in economy of maintenance, but not usually in weight or space-saving because structural and fire-resistance requirements are met with ordinary materials.

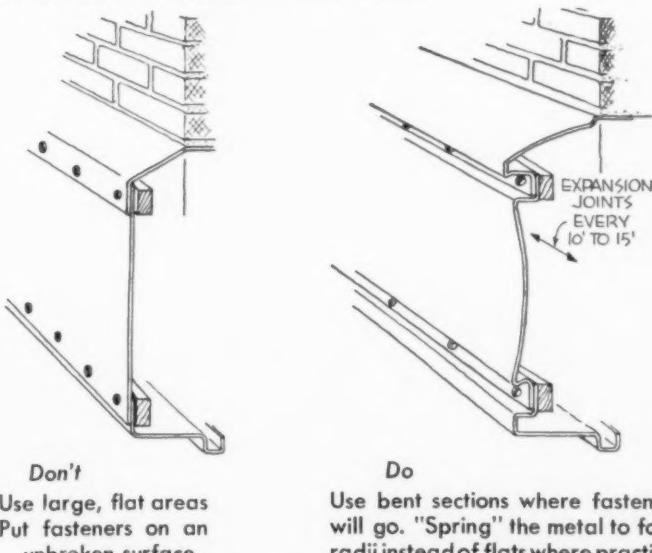
3. Sandwich units that embody all wall functions in composite panels have been made. They have met conventional fire tests, and they have justified their existence economically. From the outside inward, a typical sandwich would use stainless steel for appearance and imperviousness, some porous material or an air space for condensate drain, a vapor barrier, then a plastic or concrete insulator structural member. Because the stainless skin is not expected to resist

material for exterior work made of metal.

Use of Bent Shapes to Prevent "Oilcanning"

The problem of avoiding a wavy

TO AVOID "OILCAN" WAVINESS,



Don't
Use large, flat areas
Put fasteners on an
unbroken surface

Do
Use bent sections where fasteners
will go. "Spring" the metal to form
radii instead of flats where practical

YOU'RE LOOKING AT

THE ONLY INLAID

LINOLEUM

DEVELOPED, PROVED,

AND GUARANTEED

FOR ON-GRADE

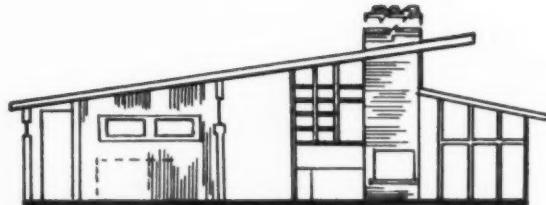
CONCRETE

INSTALLATION

**NEW
GOLD
SEAL**



Ranchtile
LINOLEUM



Newest development for on-grade concrete floors, Ranchtile can be installed easily, quickly. No special equipment necessary. Installation specifications in every box.



For complete information, specifications, and samples, write Contract Sales Department, Congoleum-Nairn Inc., Kearny, N. J.

RANCHTILE fills the very important need for a luxury floor covering in today's ranch-style house: it's the *only* true inlaid linoleum that can be laid successfully over concrete *on grade*.

The textured beauty of Ranchtile, combined with its superb practicality, makes this exciting new floor covering ideal for installation throughout *all* rooms. And, as shown in

these particular small room shots, the use of one color, in a simple cross-directional pattern, creates the illusion of spaciousness.

Ranchtile delivers all the advantages of inlaid linoleum at its very finest . . . *true resilience, bright, clear colors, smooth surface, grease resistance . . . PLUS the famous Gold Seal guarantee of satisfaction or your money back!*



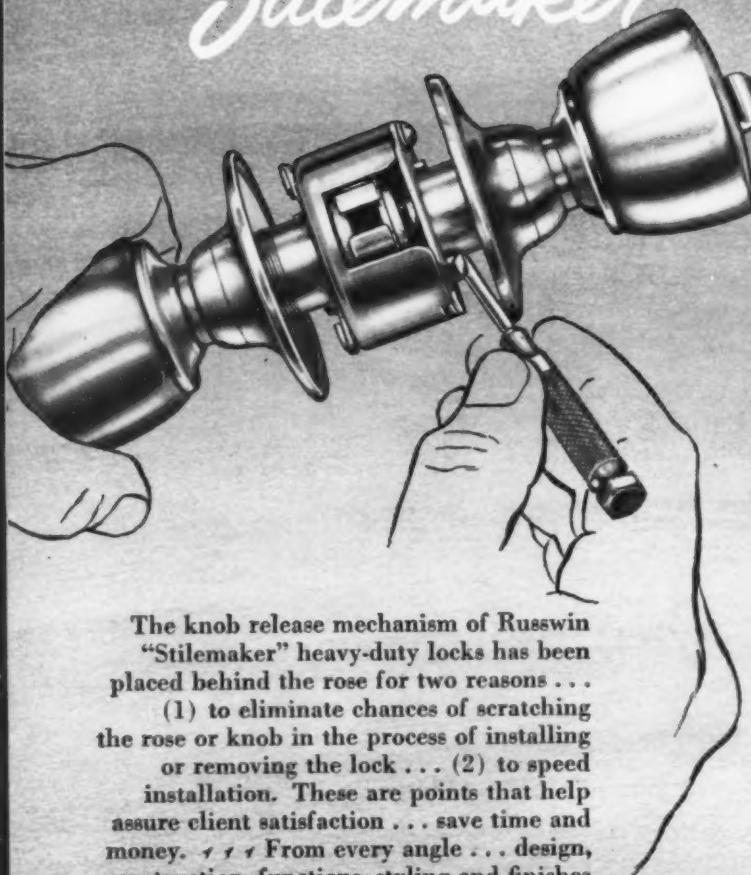
Close-up of Ranchtile pattern. This contemporary textured design is available in six colors: monochromatic grey, green and tan, and three striking multicolors on modern light backgrounds.



CONGOLEUM-NAIRN INC.
• KEEARNY, N. J.
MAKERS OF GOLD SEAL GUARANTEED FLOOR AND WALL COVERINGS

A good point to remember about the Russwin

"Stilemaker"



The knob release mechanism of Russwin "Stilemaker" heavy-duty locks has been placed behind the rose for two reasons . . .

(1) to eliminate chances of scratching the rose or knob in the process of installing or removing the lock . . . (2) to speed

installation. These are points that help assure client satisfaction . . . save time and money. *From every angle . . . design, construction, functions, styling and finishes*

. . . every effort has been made to merit your complete confidence in specifying Russwin "Stilemaker" heavy duty locks.

Send for detailed information.

Russell & Erwin Division,
The American Hardware Corporation,
New Britain, Connecticut.

Engineered to
Architects' Specifications
All Popular Functions
Knob styles . . . in wrought
or cast bronze or brass

RUSSWIN®
"Stilemaker"

Architectural Engineering

(Continued from page 182)

systems commonly used. Close control of room temperature is not critical but humidity control is desirable for the patient uptake-measuring room since changes in humidity or unduly high humidity may affect the accuracy of the radiation measuring equipment and increase the cost of instrument maintenance.

Electrical Requirements

Lighting. Lighting intensities in these areas are not critical. About 20 to 30 ft-candles at work surfaces is desirable for routine work. For the light source, incandescent lamps are preferable to fluorescent lamps because the latter, due to their electrical characteristics, sometimes interfere with the accuracy of the radiation measuring instruments.

Receptacles. Receptacles, or convenience outlets, are normally provided on the fume hood. Additional outlets should be located along the walls of the uptake-measuring room for general use. Plug-in strips, or receptacles spaced about 3 ft apart, should be located above the work surfaces. Electrical outlets used for operation of radiation measuring instruments should be connected with a constant source of voltage so as to minimize errors in radiation measurements. If there is significant fluctuation in line voltage, a voltage regulator with a capacity of about 300 volt-amperes may be needed.

Grounding. The uptake-measuring room should have a convenient method of grounding instrument cases. A ground bus bar $\frac{1}{2}$ by $\frac{1}{8}$ in. on the wall above the work-tops mounted about $\frac{1}{2}$ in. out from the wall is convenient for clip-on connections.

Room Finishes

Spills of radioactive solutions in the laboratory may occur from time to time so materials for room finishes must be selected on the basis of easy decontamination or replacement. The materials should be smooth, relatively impervious and dust free. Construction should be free of open joints, small openings and surfaces difficult to clean.

Flooring material may be asphalt, linoleum or vinyl tile, or sheeting. Tiles are preferred to sheeting because contaminated sections can be removed easily without disturbing other parts of the floor.

Walls may be of plaster or any hard surface material painted with a good grade of enamel. The interior of the

RADIOISOTOPE FACILITIES

hood, and walls above work-tops or any other work areas, may desirably be coated, in addition, with a stripable paint.

Equipment

Work Surfaces. Where liquids are used, work surfaces should have a splash-back of at least 3 in. Stainless steel surfaces, while highly desirable, are no longer considered essential; materials such as soapstone, sheet plastics or laminated plastics are among those considered satisfactory (2). Protection against contamination by accidental spill of radioactive material is provided by a replaceable temporary covering of diaper paper renewed as necessary.

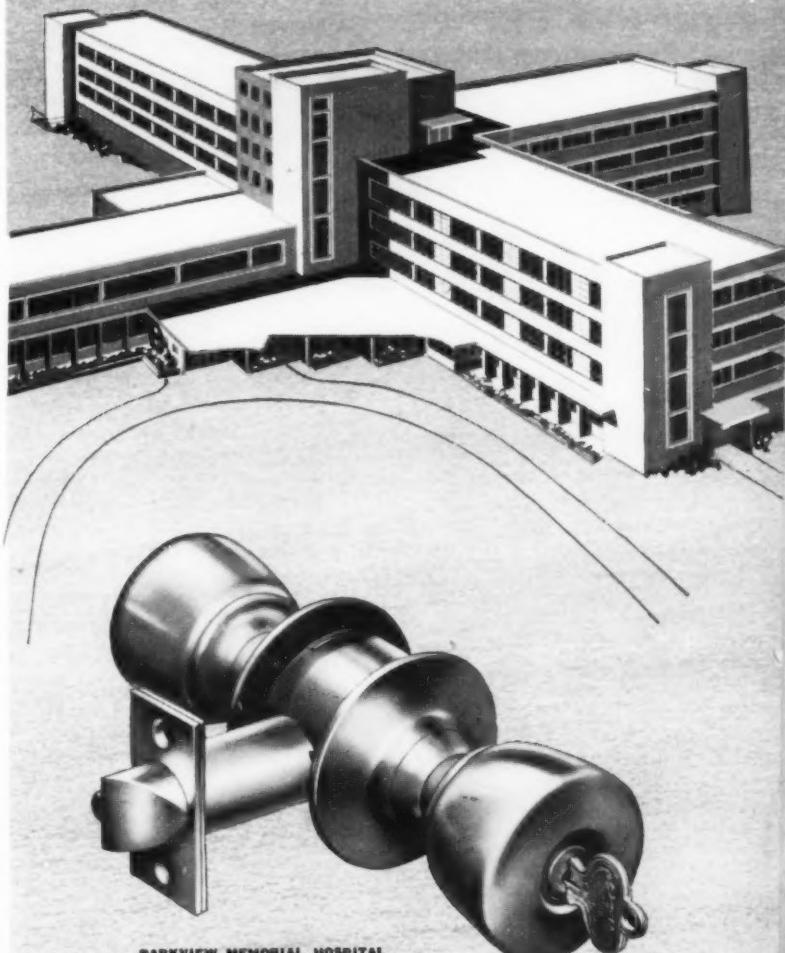
Hood. The fume hood shown is approximately 4 ft by 3 ft deep and contains the usual laboratory services of gas, hot and cold water, steam and electricity. The hood should be designed and installed in such a manner that valves may be conveniently repaired. The base of the hood should be designed to bear the concentrated, extra weight-load of lead-brick barricades used for shielding radioactive substances being used or temporarily stored in the hood. Also, the floor of the hood should be covered with a tray of stainless steel or some other suitable substance readily cleaned or replaced in case of radioactive spills. If high intensity material is to be handled in the hood, consideration should be given also to possible need for additional lead shielding in its floor to protect the lower extremities of personnel working at the hood.

A separate air exhaust duct from the hood should extend through the roof for at least 5 ft at a point where the gases will be thoroughly diluted and dispersed before they can re-enter a building. The fan should be located near the exhaust end of the duct to assure a negative pressure throughout its length. In order to avoid contamination, the fan motor should be mounted outside the duct.

Plumbing

In the type of installation covered by this article, the radiation level of the materials handled will be comparatively low. No special plumbing lines, materials or storage tanks will be required. Durable materials should be used and special attention given to avoidance of cross-connections and prevention of back-siphonage. All piping, traps and fixtures must have easy access.

The New "Look" in Fort Wayne...



PARKVIEW MEMORIAL HOSPITAL
Fort Wayne, Indiana

ARCHITECT . . . A. M. Strauss, Inc.,
Fort Wayne, Indiana

CONTRACTORS . . . Hagerman
Construction Corp.,
Fort Wayne, Indiana

gets the
new lock
in builders'
hardware

RUSSWIN®
"Stilemaker" HEAVY-DUTY CYLINDRICAL LOCK

Russell & Erwin Division
The American Hardware Corporation
New Britain, Conn.



These new Fort Worth



Meet Mr. E. E. Cloer, president of Fortune Arms Apartments, the new attractive and efficiently designed structure in Fort Worth, Texas. He says:

"One factor in my decision to install General Electric Appliances is the excellent public acceptance of *all* G-E Appliances.

"I feel that they enable me to rent my apartments much easier and that they help to *keep* them rented.

"Furthermore, my experiences with General Electric equipment over the years has been *most* satisfactory. From an operating standpoint, it is always necessary to think of maintenance and operating costs. Past operations have revealed that General Electric is most economical in the long run."



Mr. Charles E. Armstrong, A.I.A., architect of the project, is particularly enthusiastic about the G-E Disposall.[®] He says:

"The General Electric Disposall is not only a wonderful convenience for tenants, but it eliminates garbage-handling costs for management, and that's important in these days of increasing labor costs!"

Considers this, too . . .

". . . In addition to their dependability, I prefer G-E Appliances because General Electric manufactures a *complete, matched line*. My first choice is General Electric—*always!*"

Home Bureau, General Electric Company, Louisville 2, Kentucky

GENERAL  **ELECTRIC**



Simplicity of design, efficient lighting and unique use of basic materials mark the distinctive lobby of Fortune Arms Apartments.

apartments have "rental insurance"



The General Electric Disposall® eliminates garbage-handling for tenants—headaches for management

TENANT:

"The G-E Disposall® eliminates food-waste before it becomes garbage and it is so simple to operate. I just turn on the faucet and wash away food scraps. I wouldn't ever want to be without it!" says Mrs. Dorothea Rogers, an appreciative tenant.



It's easier to keep
an apartment rented—when there's
a General Electric Dishwasher



TENANT:

"I like the advantage of the General Electric front-opening Dishwasher because of the increased work surface it gives me in my efficient kitchen. Furthermore, my dishes and glassware come out so clean and sparkling!"



A tenant stays sold on an
apartment when there's a dependable
General Electric Refrigerator

TENANT:

"I always have plenty of storage space for fresh foods and leftovers in my General Electric Refrigerator. I like the many convenient features, and it operates so quietly, too. I think it's the finest refrigerator ever made!"



Another Globe Elevator!



Here's one of the world's busiest elevators. Traffic in this bustling metalworking plant is really heavy and fast. The operator of a fork truck can't waste time climbing down to open elevator doors. And he doesn't. Without leaving his seat, he uses a short stick to punch a control button mounted in a ceiling bracket—and the doors of the Globe Oilift Elevator open automatically. Further valuable time is saved because the elevator is equipped with automatic leveling and anti-creep devices.

Globe Oilift Elevators cost less to install, operate, and maintain. Ascent is powered by an oil-operated cylinder; descent is by gravity actuated through the hydraulic mechanism. This principle eliminates expensive penthouse construction and elaborate mechanisms.

Globe Oilift Elevators are custom-assembled to meet your specifications. Send today for the new Globe Oilift Elevator Catalog AR-436.

GLOBE

THE BEST LIFT

GLOBE HOIST COMPANY, 1000 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa and Philadelphia, Pa.)

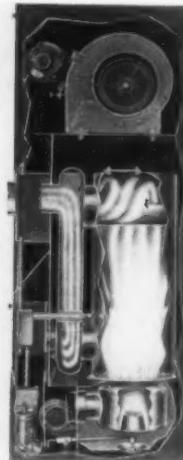
Architectural Engineering

PRODUCTS

(Continued from page 183)

Gas-Oil Heating

Two new Perfection products are now being marketed. The first of these is a Model 4000 "Superflex" winter air conditioner furnace. Rated at 110,000 Btu, this model features a saddle-type, fully-enclosed high pressure oil burner with rubber-mounted components for noiseless operation. The two-speed blower is housed in a compartment which may be removed for easy transportation and may be installed on either the left or right hand side of



Furnace has high-pressure oil burner, may be converted to gas

the combustion chamber casing. The unit will reportedly heat a six- to eight-room house comfortably. The manufacturer states that he will exchange the oil burner for a gas burner anytime within two years, with no cost except for the installation charges. Another model, the 4001, is identical except for a one-speed blower.

The second product is a counter-flow furnace for perimeter heating of homes having the ductwork running under the floor or imbedded in concrete slab. Known as the Model F-601, it is rated at 74,000 Btu, and may be converted from oil to gas in a matter of minutes. The unit is compact and is described as ideal for installation in

(Continued on page 204)

Styled by Women to please the "boss"

...NEW Curtis Kitchens



Embodying 53 features women want, the new Curtis woman-planned wood kitchen cabinets fit any size or shape of kitchen.



Here are just a few
of the reasons
why the new
Curtis kitchens
make such an instant
appeal to women



What to do with trays and
cookie sheets is effectively
solved by this Curtis storage
unit for vertical filing. Note the
convenient sliding tray at top.



Plenty of room for fruits and
vegetables here! See how these
sliding bins tilt out for easy
access. Bins may also be used
for pans or other storage.



This wall corner spin shelf puts
everything at the housewife's
finger tips. It can also be installed
in a base corner unit.

Curtis makes a complete
line of architectural wood-
work and Silentsite win-
dows for homes of all types
and sizes. Make your next
home "all Curtis."



Here, at last, are kitchens
designed and styled by women
to please the supreme "boss"
of the kitchen—Mrs. Housewife!
In the new Curtis kitchens,
swing-out shelves, tray units,
sliding bins and many other new
features combine to make
kitchen work easier than it has
ever been before. And to top it
all, there's fresh, modern design—
with flush-surface wood cabinets
available either in *natural birch*
or finish coated in white,
ready for decorating to suit the
owner's taste.



The new Curtis cabinets pro-
vide space for everything. Here
is a special drawer unit, with
deep bread drawer.

1866
CURTIS
WOODWORK

Get All of the "News" About
the New Curtis Kitchens—
Mail the Coupon!

Curtis Companies Service Bureau
AR-12 Curtis Building
Clinton, Iowa

Gentlemen: Please send booklet on the new Curtis
woman-styled kitchens.

Name.....

Address.....

City..... State.....



CALL YOUR *Ramset* DEALER FOR ON-THE-JOB SERVICE

For almost any fastening job into steel or concrete, your RAMSET Dealer can probably help you do it faster, easier, at lower cost.

That's because he is skilled in adapting the high-speed RAMSET Tools, Tru-Set Fasteners and other products into an integrated service to meet the specific requirements of the work. He is no "long-distance, white-collar operator"—but will put on his working clothes, and help your men, right on the job, to apply instantaneous RAMSET Fastening to save you time and money.

From the 54 sizes and types of RAMSET Tru-Set Fasteners, he will help select the right ones for the job . . . show you how to use RAMSET fixtures and accessories for unusual work—and get fast help from headquarters, if needed, for special applications.

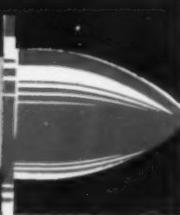
For high-speed, low-cost, easy-to-make fastenings into steel and concrete—call your RAMSET Dealer.

Ramset Fasteners, Inc.

Ramset Division, Olin Industries, Inc. • 12117 BEREA ROAD • CLEVELAND 11, OHIO

DON'T HAND SET...

Ramset WITH TRU-SET FASTENERS



Architectural Engineering

PRODUCTS

(Continued from page 200)

alcoves or utility rooms, since it occupies only about as much floor space as a kitchen chair. Dimensions of the furnace itself are 22 in. wide by 25 in. deep. It is delivered as a fully-wired and assembled packaged unit requiring only simple connections to fuel supply, 110 v line and thermostat cable for installation. Front panels are readily removable for easy access to the fully-enclosed burner and blower controls and cleanout ports. The blower motor is rubber-mounted for noiseless operation. The furnace has a rust-proofed casing and a white baked enamel finish. Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

Compact Lavatory

Designed especially for trailers, and for limited spaces in cabins, small homes or motels, the *Terry* is a small, compact



Lavatory is designed especially for limited spaces, features front overflow

lavatory of vitreous china. It is 16 in. wide and projects 12½ in. from the wall. A front overflow is featured, and the china surface is reportedly easy to keep clean. Eljer Co., Ford City, Pa.

Ozone Lamp

The *Belford Ozone Air Conditioner* is described as an efficient generator which combines maximum odor-destroying effectiveness with long bulb life and economical operation. The unit is avail-

(Continued on page 208)



LUMBER GRADING CLASS: Here, and at other sessions, experienced graders take "refreshers" and new students, their training.



PROPER CAR LOADING is the concluding step in preparing good lumber, correctly manufactured, for satisfactory service in final use.

Reliability in Grading and Handling

When the last piece of a shipment of lumber is found to be as satisfactory as the first, uniform grading and careful handling are two important factors contributing toward the delivery of such value.

The modern manufacture of refined lumber is a complex process requiring precision machinery operated by able production people.

Grading begins at the headrig, where the experienced sawyer judges the grades and sizes that can best be cut from each log. In resawing, edging, trimming, sorting, finishing, equal skill and equal care must be exercised to insure accurate, uniform grading.

Throughout the Weyerhaeuser mills attention also prevails to insure care in handling. Thorough training prepares workers for each exacting task. In the operation of lumber handling equipment such as log turners, conveying machinery, grading tables and lumber carriers, the watchword is to protect finished lumber against damage to appearance.

To designers and owners, this extra care in grading and handling Weyer-

haeuser 4-Square Lumber means extra value. When you're buying lumber, look for the brand name that stands for reliability . . . the name WEYER-HAEUSER 4-SQUARE.

One of a series of advertisements defining the important factors contributing to the production of good lumber.



The Snoqualmie Falls, Washington, Mill

At mills located on the West Coast and Inland Empire, Weyerhaeuser 4-Square Lumber is produced in a range of products from Douglas Fir, Idaho White Pine, Ponderosa Pine, West Coast Hemlock, Western Red Cedar and related species.

Weyerhaeuser 4-Square Lumber and Services

WEYERHAEUSER SALES COMPANY • ST. PAUL 1, MINNESOTA

For Gleaming, Corrosion-Resistant Interiors



Cuts Your Material Costs Puts New Beauty in Your Designs

Wondering how to make a new interior *completely modern*—or put new beauty in an old one? PERMACLAD Stainless Clad Steel may be your cost-cutting answer.

We make PERMACLAD by diffusion-welding a layer of stainless steel *inseparably* to a mild carbon steel backing. *Result:* PERMACLAD has the lasting, corrosion-resistant beauty of solid stainless and the cost-cutting, easy-forming qualities of mild steel.

The stainless layer is usually 10% or 20%, but may be more or less if desired. Also, reduction of weight is possible through the use of A.W. DYNALLOY, low-alloy, high-strength steel as a backing in place of ordinary mild carbon steel.

Doors, panels, escalators, wall panels, and interiors of all kinds can be fabricated easily with PERMACLAD. For technical data write for our free, 8-page Booklet P-88. Our engineering staff will be glad to talk with you about any specific problem and make installation suggestions.

FOR BETTER PRODUCTS AT LOWER COST... Specify PERMACLAD

Over 125 Years of Iron and Steel Making Experience

PERMACLAD Stainless Clad Steel
ALAN WOOD STEEL COMPANY

Conshohocken, Pa.

Gentlemen: Please send me additional information on PERMACLAD Stainless Clad Steel—and a copy of your free, 8-page Booklet P-88.

Name _____

Title _____

Company _____

Address _____ City _____ State _____

Other Products: A.W. ALGRIP Abrasive Floor Plate • A.W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)



able in one and two-bulb models for use in areas of up to 1000 and 1800 cu ft respectively. A completely enclosed transformer conforms fully to Underwriters' Laboratories safety requirements. The outer case is constructed of heavy gage steel, chromium finished in alternate mirror and satin bands. An 8-ft cord makes it convenient to mount the unit above eye level for best operation. Bretford Mfg., Inc., Franklin Park, Ill.

New Fabric Line

Consisting of 111 patterns and 612 colors, Greeff's new fall line of fabrics includes designs for traditional as well as contemporary decor. Among some of the fabrics in the line are cotton, spun rayon, silks, chintzes, Fiberglas, gauzes and others. Especially interesting are the small modern prints suitable for up-

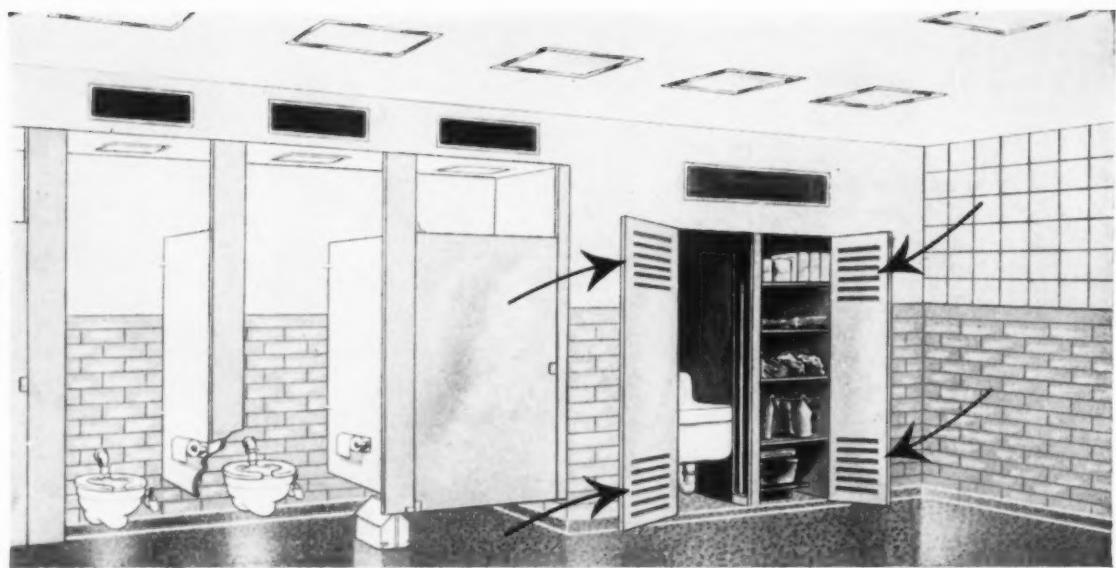


Cotton screen prints are contemporary in feeling and comparatively inexpensive

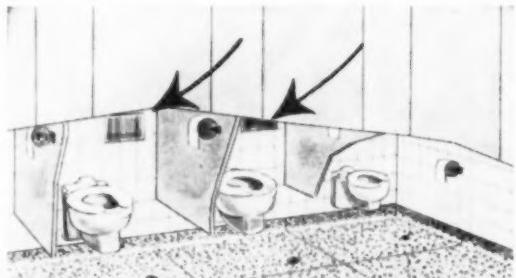
holstery, slip covers and draperies. Many of the printed patterns have correlated wall papers. Color plays an important role in the new line—featuring mustard, pumpkin and lavender hues along with all of the more commonly used colors. Greeff Fabrics, Inc., 4 E. 53rd St., New York 22, N.Y.

(Continued on page 212)

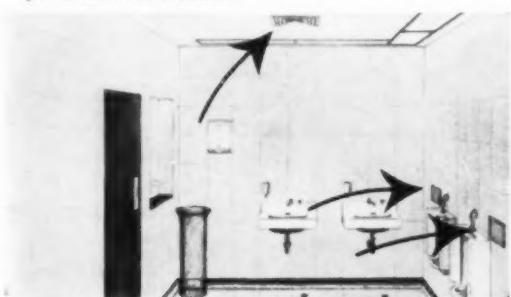
For best air circulation, odor and fume removal . . . provide ventilation louvers in doors of janitors' supply closets.



Ventilation planning can make or break a modern washroom



In large washrooms, exhaust vents near each toilet remove odors quickly. Correct positioning is important for best results.



Combination of ceiling air diffusers and exhaust vents close to urinals—a successful arrangement for smaller, heavily used washrooms.



SCOTT
Symbol of
Modern Washrooms

Trade Mark "Washroom Advisory Service" Reg. U.S. Pat. Off.

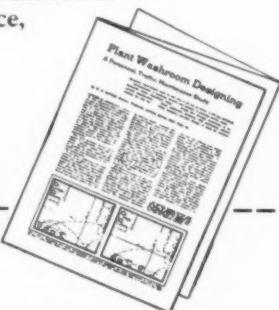
WASHROOM VENTILATION has a noticeable effect on the health and morale of employees. When a washroom has a fresh, clean smell about it, you can be sure it has correctly positioned, properly functioning vents. Look for good production records, less illness and absenteeism, too.

In your next building plans, make allowances for correct washroom ventilation. It's a wonderful opportunity to give your client good employee relations for years to come—built right into his plant!

QUESTIONS? Call in your Scott Washroom Advisory consultant. He's one of a group of trained specialists who have gained real know-how from servicing over 500,000 washrooms. And he's ready to give you the answers to any of thousands of questions on modern washrooms.

Contact Washroom Advisory Service,
Scott Paper Company, Chester, Pa.

Send for FREE Leaflet...
"Plant Washroom Designing"



Washroom Advisory Service
Dept. AR12
Scott Paper Company
Chester, Pennsylvania

At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, "Plant Washroom Designing."

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

PRODUCTS

(Continued from page 208)

New Showroom for Furniture And Decorative Accessories

Designer Edward Wormley and associate Edward Crouse have created an unusual background for displaying merchandise in Raymor's new *Showroom 400*. Introducing a "come and find it" approach, as contrasted with the usual "see through" system which is so



Photo left, reception area of showroom. View above shows suspended panels which separate display areas

Hubbellite

the inorganic copper-oxychloride floor surfacing material which is static-draining, roach repellent, and mould-retarding . . .

is back!

Copper powder, a basic ingredient of Hubbellite, has been off the market for nearly two years but is now available. Since Hubbellite is again being produced, expert applicators have been established in many major cities and all installations are being made under trained supervision. Write for descriptive literature and specifications.

Hubbellite Corporation

1312 Farmers Bank Bldg. • Pittsburgh 22, Pa.

prevalent now, Mr. Wormley has used suspended panels of wood in a striking range of colors, mounted on metal floor-to-ceiling standards which separate the display areas. This helps eliminate a great deal of confusion when the visitor is looking at small objects or lamps, as each item is made to stand out in a more effective manner. The panels also create a false perspective which makes the room appear longer. Background color has been reduced to a minimum, with walls and ceiling painted chalk-white, floor of sand-colored asphalt tile, and all fabrics of white or off-white. An attractive reception area is arranged in the crossbar of the T-shaped room. A similar showroom has been recently opened in Chicago, Richards-Morgenthau, 225 Fifth Ave., New York, N. Y.

Two-Temperature Gas Water Heater

A completely automatic water heater, the *Duo-Temp Laundrymaster*, has been designed especially for home use where automatic appliances such as dishwashers and washing machines are in constant use. Providing hot water of two different temperatures from the same tank, the heater gives a constant supply of water at the right temperature for every type of washing job. From the 180 deg outlet, a separate line is run to the automatic clothes and dishwasher. A second source of water, mixed to the moderate temperature of 130 deg, goes into other household faucets for general home use. Features of the heater include its rust-proof Ruud-Monel tank, sprint-speed burners for fast recovery and the low-turbulence cold water injector. Ruud Mfg. Co., 2934 Smallman, Pittsburgh, Pa.

(Continued on page 218)

LO-X Duct's scarf-lap joint slashes installation costs

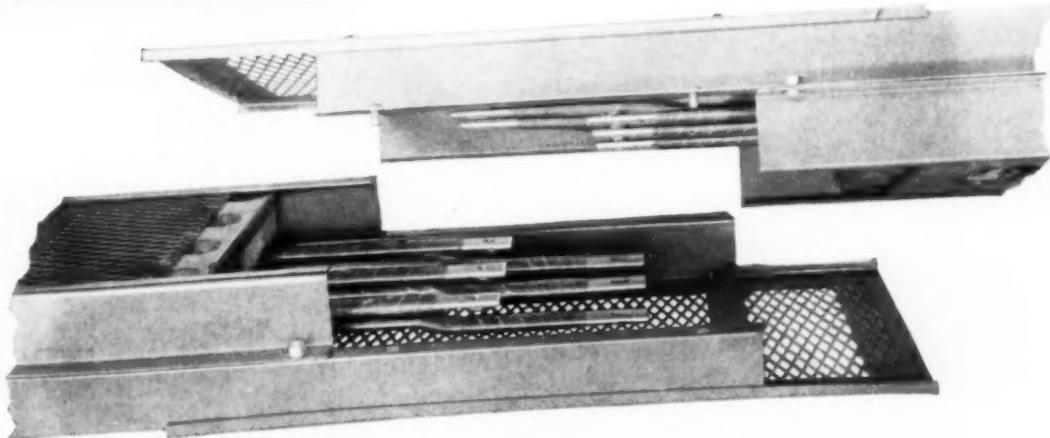
Before you specify a bus duct system, why not check carefully into installation costs? For it is here, with *BullDog LO-X BUStribution Duct*, that you can make important savings in man-hours, money and materials for your clients.

Here's why: BullDog's exclusive, patented scarf-lap joint, described below, greatly simplifies installation. Makes LO-X Duct easier, faster to install; assures a stronger, more rigid system. Your client saves substantially on initial installation, and again whenever his plant layout is shifted.

When considered along with other famous BullDog features, low voltage drop and low operating temperature, this reduction means BullDog LO-X Duct will bring rock-bottom current-carrying costs per ampere per foot.

Call in a BullDog Field Engineer or your nearby BullDog supplier for all the facts. LO-X Duct is used for feeder and welder circuits, carries up to 4000 amperes at 600 volts or less. Ask, too, about BullDog Plug-In Duct for branch circuits. Free literature available by writing direct.

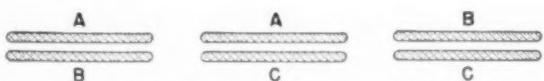
HOW IT WORKS:



SCARF-LAP JOINT—One half of each LO-X casing extends 14" beyond other half; overlaps adjoining casing end to form a highly rigid scarf-lap joint. Casings lap together simply, quickly . . . save countless installation hours. No splice plates, bulky joint covers, or complicated con-

struction to slow down the job and increase costs. No poor bus bar connections, either.

Bus bars overlap also, are bolted with splined steel inserts and special spring cup washers. Joint stays tight, whatever the current or temperature variations.



End view showing staggered-phase arrangement of bus bars in LO-X Duct.

PAIRED PHASING—Another LO-X plus! Bus bars are closely spaced inside ventilated casing and arranged in paired phases that neutralize magnetic fields, assure uniform current distribution all along bus bar. Current flows more evenly, voltage drop and temperature rise are reduced.



BULLDOG

1902 TO 1952 . . . SERVING INDUSTRY FOR 50 YEARS WITH FINE ELECTRICAL PRODUCTS

BULLDOG ELECTRIC PRODUCTS COMPANY
DETROIT 32, MICHIGAN • FIELD OFFICES IN ALL PRINCIPAL CITIES
IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO
PIONEERS IN FLEXIBLE ELECTRICAL DISTRIBUTION SYSTEMS

PRODUCTS

(Continued from page 212)

Laundry Appliances

The 15th anniversary line of Bendix Home Appliances includes four automatic washers and eleven dryers; one electric dryer that works on either 110 or 220-v circuits and six gas models, alike in appearance but differing in their ignitions and in the type of fuels that they burn. The new line has been



Flush-wall mounting of laundry units permits plumbing to be hidden

thoroughly tested as to its action on the new man-made fiber fabrics and is claimed to be ideal for washing all of them. The tumble-action washer and the dryer are designed to set flush against the wall with a range-like control panel at the rear. Some of the features of the washers include a "Magic Heater," which makes wash water hotter and gets clothes cleaner; a suspended timer which holds back washing action until the tub is completely filled — regardless of water pressure; and a speed cycle which loosens dirt more efficiently than was possible in previous models — eliminating much overnight soaking of clothes. Bendix Home Appliances, Div. of Avco Mfg. Corp., South Bend 21, Ind.

Sectional Wood Kitchen Cabinets

Reported to have been designed by women for women, a new line of sectional wood kitchen cabinets has recently been introduced. Incorporating many features usually found only in custom-built kitchens, the units include such features as sliding trays for or-

MICHAELS adjustable **ASTRAGALS**

Keep doors closed!

Type A

Type E

Write today for information and prices on Michaels Adjustable Astragals. Made of extruded bronze, aluminum or nickel, they are simple, practical, rugged, easily installed and adjusted, and available in several styles. Two are shown above. Type A (top illustration) may be applied to either wood or hollow metal bevel doors. Also used as a stop bead. Type E (lower illustration) is for bullnose hollow metal or wood double acting doors. Both types may be used at the bottom of doors. Michaels Astragals help keep doors closed tightly... eliminate drafts and air currents... keep out dirt and dust. Write for details.

OTHER MICHAELS PRODUCTS:

- Bank Screens and Partitions
- Welded Bronze Doors
- Elevator Doors
- Store Fronts
- Lettering
- Check Desks (standing and wall)
- Lamp Standards
- Marqueses
- Tablets, Signs, Name Plates

- Stair Railings (cast and wrought)
- Wrought and Cast Radiator Grilles
- Grilles and Wickets
- Kick and Push Plates
- Push Bars
- Cast Thresholds
- Extruded Thresholds
- MI-CO Parking Meters
- Museum Trophy Cases

THE MICHAELS ART BRONZE COMPANY, INC.

234 SCOTT STREET, COVINGTON, KENTUCKY

Manufacturers since 1870 of many products in Bronze, Aluminum and other metals



Natural birch cabinets feature characteristics of custom built kitchens

dinary size kitchen utensils, revolving shelves in base and wall corner units, vertical filing storage space for trays, plates, platters, etc., built-in vegetable and fruit bins and many other unusual features. Two finishes are available — the complete cabinets in white gloss enamel, or white gloss enameled cases with unfinished natural birch fronts. Doors may be assembled either right or left hand and are over-hanging so that they may be used with or without pulls. Curtis Cos. Inc., Clinton, Iowa.

(Continued on page 222)

Think of Spectators' Comfort

When Selecting Your Gymnasium Stands



Universal Roll-A-Ways Provide More Leg Room Than Any Other Leading Stands

When selecting or specifying gymnasium stands, it is quite natural for you to favor those which provide maximum seating in minimum space. But what about the spectators? Are you considering their comfort? Cramped seating facilities don't encourage big turn-outs for basketball games or other events.

However, this need not be a problem. With *Universal Roll-A-Way* Stands you can meet all demands . . . for comfort as well as maximum seating in minimum space.

Thanks to improved design and construction, Roll-A-Ways provide more leg room than any other leading stands. The extra distance from seat board to foot board ($18\frac{1}{2}$ ") and the centered position of vertical filler board beneath the seat permit every spectator to keep his feet and

legs in normal position (illustrated at right). Continual comfort is assured.

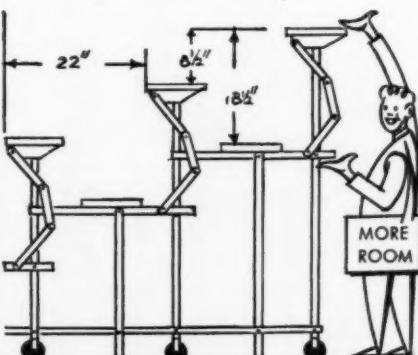
Universal Roll-A-Way Stands are engineered to individual specifications, fit any space, and afford perfect visibility. When not in use, they may be rolled back to the wall, opening approximately 70% more floor space for regular gymnasium activities. They are ideal for large capacity or small; neat and attractive; exceptionally strong and safe.

Investigate *Universal Roll-A-Way* Stands today. Write for catalog and list of installations. No obligation.

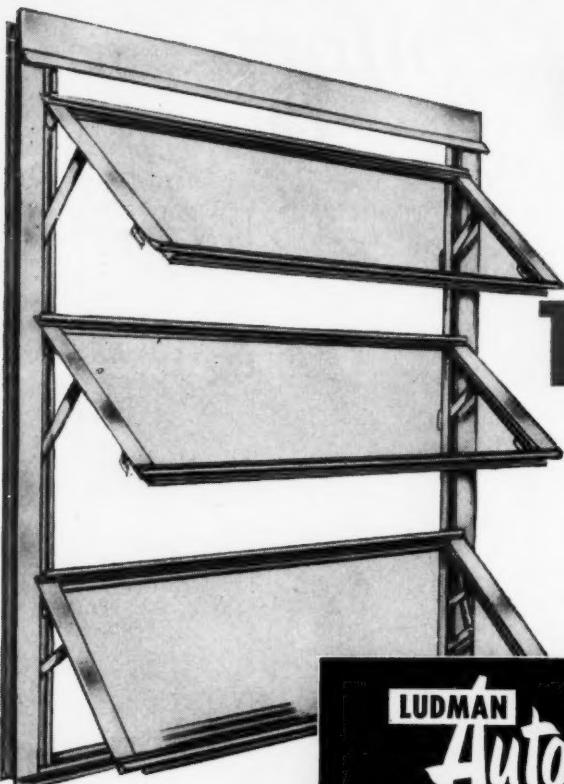
ANOTHER PROMINENT UNIVERSITY SELECTS UNIVERSAL! Roll-A-Way Stands have just been installed in the large new gymnasium at Vanderbilt University, Nashville, Tenn. Another proof of preference!



Notice the natural, comfortable position of this man while seated on *Universal Roll-A-Way* Stands. The extra distance from seat board to foot board and the centered vertical filler board mean maximum space per spectator. See detail drawing below.



UNIVERSAL BLEACHER COMPANY
606 SOUTH NEIL STREET • CHAMPAIGN, ILLINOIS



Tightest Closing Windows Ever Made!

TEN TIMES TIGHTER

Than generally accepted standards for awning and casement windows

*cuts fuel bills or air conditioning costs
for a Lifetime...*

Patented Auto-Lok operation, acting together with "floating seal" weatherstripping, provides and maintains for the life of Auto-Lok Windows a degree of weathertightness heretofore thought impossible in any window.



This degree of weathertightness is maintained always since Auto-Lok hardware eliminates the wear at critical hinge points that results in vents that cannot be closed tight. In other awning-type windows, destructive force must be applied on the hinges at the top of each vent in order to close the vents at the bottom. With patented Auto-Lok operation no force is applied on hinges. Every vent in an Auto-Lok Window closes tight automatically—always. The result: guaranteed minimum air infiltration...no wear, no hinge adjustments...ever!

Watch the "Hook" and the "Lug" Pull it Snug!

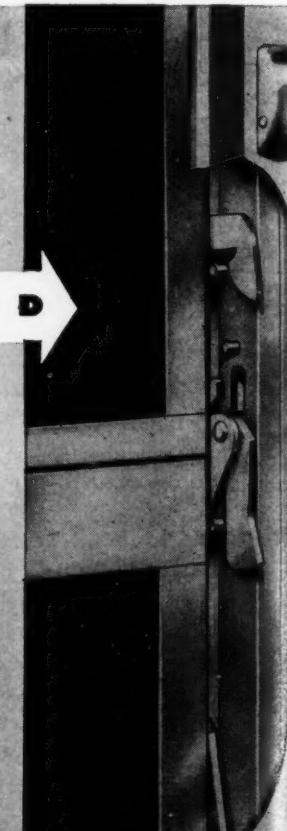
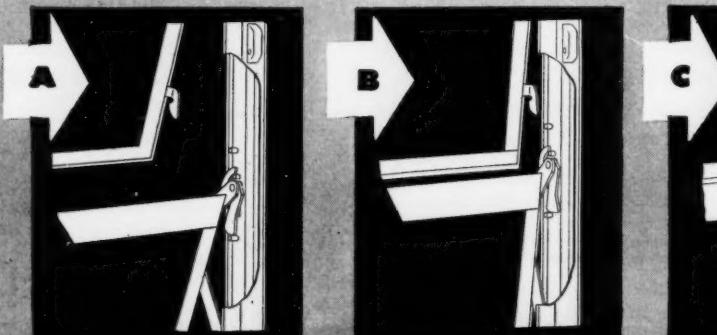
Closes Ten Times Tighter Than Generally Accepted Standards . . .

Here's how: (a) While vents are swinging in toward the frame, the vertical operating bars at each side of window move up. (b) Note how lugs on operating bars engage hooks on vents as the bar moves up . . . applying the wedging action that pulls the vents in tightly against the frame. (c) The vents are pulled in snug, and pressure against vinyl weatherstripping assures a complete seal (like the door of your refrigerator). Automatic locking has commenced. (d) Final "locked" stage of AUTO-LOK operation . . . hooks have moved in, adding extra locking action near the

bottom of the vents, on both sides . . . without any strain on hinges.

This action is entirely automatic and is accomplished during the normal, effortless turning of the operator handle. There is no destructive force on the hinge points . . . no periodic adjustments of hinges necessary to close vents tight against frames, and keep them closed tight.

New Center Safety-Lok in convenient center position, pulls bottom vent in tight and securely locks it . . . provides extra protection against intruders.



L U D M A N L E A D S T H E W O R L D

LUDMAN
ONLY **Auto-Lok**
GIVES YOU ALL 10
OF THESE Outstanding FEATURES

FRESH AIR WHILE
IT'S RAINING ...

No more running to close windows... slanting vents keep rain out when window is open.



WARMER IN WINTER ...

Auto-Lok Windows are the tightest closing windows ever made by actual laboratory tests. Heat stays in... cold stays out... cutting fuel costs!

COOLER IN SUMMER ...

Auto-Lok Windows open widest... almost 90°. The slanting vents help to scoop in even the slightest breeze... always inward and upward thus eliminating drafts.



CONCEALED HARDWARE

Extra heavy extruded aluminum sections conceal operating hardware. No unsafe, unsightly mechanism exposed to collect dust. Operator does not interfere with drapes, blinds, etc.

CENTER SAFETY-LOK ...

A new improved locking feature that securely locks the bottom vent. Center position makes it handier, more accessible. Extra protection against intruders.



EASIEST TO CLEAN...

Nothing to lift out... no vents to remove... no gadgets to disengage. Simply open wide and clean all glass from the inside... top vent, too!

FRESH AIR
NITE-VENT ...

Bottom vent opens slightly for night ventilation, while upper vents remain securely locked... fresh air circulation during bad weather, too!

PRACTICAL BEAUTY ...

Narrow horizontal lines and graceful tilt of vents in every open position add distinction to any home... lend themselves to a wider variety of architectural arrangements.

FINGER-TIP CONTROL...
for a lifetime. Perfectly balanced, friction-free mechanism operates window at the touch of a finger. No adjustments ever necessary... never sticks, never rattles!

INTERCHANGEABLE
SCREENS AND
STORM SASH ...

Can be handled all from the inside. Just flip the clips... no tools required. Reduce a day's work to an hour!

New
Control
Bar



THE NEW LUDMAN AUTO-LOK CONTROL-BAR...

An example of how LUDMAN SOLVES WINDOW PROBLEMS ...

THE Simplest OPERATING WINDOW EVER MADE!

Here is a new AUTO-LOK Window especially adaptable for schools and institutions... where extraordinary severe usage makes it advisable to use an operating means that is sturdy yet designed for quick, simple, easy operation. A handsome destruction proof smooth aluminum alloy bar takes the place of the conventional operator... an effortless push-out or pull-in operates the window!

Specify Windows on the Basis of Facts

Here's proof that Ludman Auto-Lok Windows give you every feature that is important in a window! Here's proof that Auto-Lok Windows are designed and manufactured to give a lifetime of outstanding window service... plus a lifetime of trouble-free operation.

NOTE AIR INFILTRATION COMPARISON FIGURES SHOWN IN THIS CHART... WHICH PROVE AUTO-LOK THE TIGHTEST CLOSING WINDOWS EVER MADE BY ACTUAL LABORATORY TESTS!

* Cubic Feet Per Minute per lineal foot of crack perimeter.

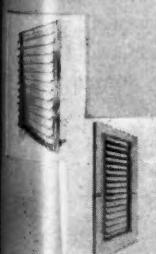
** According to Pittsburgh Testing Laboratories.

*** Generally established standards.

shown
by this
check
chart

1. Automatic Locking	✓		
2. Extrameric Vinyl Weatherstripping	✓		
3. Center Safety Lock	✓	✓	✓
4. Finger-Touch Operation	✓		
5. Clean outside from inside... top vent too... without removing any part of window	✓	✓	✓
6. Delayed Action Opening	✓		
7. Concealed Hardware	✓	✓	✓
8. Interchangeable Inside Screens and Storm Sash	✓	✓	✓
9. Flip Clips for screens and storm sash rotation	✓		
10. Weather protection when window is open (ventilation even while it is raining.)	✓		✓
11. DRAFT Ventilation (can open)	✓		✓
12. AIR INFILTRATION*	0.095**	0.5***	1.0***
13. Draft Free Ventilation	✓		✓

other LUDMAN products



LUDMAN WINDOTITE JALOUSIES... will turn an old-fashioned porch or breezeway into the most talked about room in the house. And in new building construction, their popularity is increasing at an amazing rate.

LUDMAN JALOUSIE DOORS...

These beautiful doors bring brightness and light into dark foyers and hallways! 3 doors in one—regular door, screen door and storm door.

LUDMAN ENGINEERING & ARCHITECTURAL PLANNING SERVICE

Ludman Window "know how" can help solve your window problems. Our engineering and planning staff is at your service.

LUDMAN Corporation Dept. AR12
Box 4541, Miami, Florida

LUDMAN
Auto-Lok
AUTOMATIC LOCKING
PATENTED

WINDOWS
ALUMINUM OR WOOD

WINDOW ENGINEERING

PRODUCTS

(Continued from page 218)

Living-Dining Room Furniture

Shown recently at the Chicago market, a *Sequoia Redwood Group* designed by Milo Baughman consists of nine pieces of correlated furniture for indoor or outdoor use. Consisting of a pair of love seat-sized sectionals, sofa, club chair, ottoman that can double as a table with the cushion removed, a 38 by

38 coffee table and a 28 by 28 corner table, the group also includes a 33½ by 66 dining table with matching benches, and a rectangular utility bench that can also serve as a seat or coffee table and is available with or without a pad. The legs of all of the redwood pieces are made of wrought iron; curved ends relieve the straight lines of the furniture. Either innerspring or cotton-filled cushions may be obtained. They are available with covers of solid duck, printed duck or a linen-like Flaxweave material. The Flaxweave colors are natural, straw,



Redwood and wrought iron is combined in attractive outdoor dining group

**POINTS OF EXCELLENCE (6)**

SANITARY Features

Because of its hard glazed face, ROMANY TILE is one of the easiest surfaces to clean and keep clean. Acid cannot stain, fumes cannot penetrate, smoke cannot mar this tile, nor affect its color. Highly recommended for hospitals, schools, public buildings—wherever absolute dependability is essential.

Every Architect should have our Sample Tile Chart No. 6. It's free.

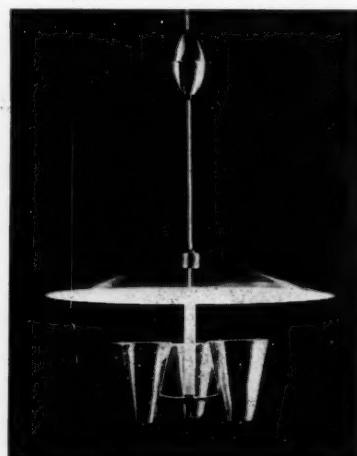
**UNITED STATES
QUARRY TILE CO.**

Member: Tile Council of America
and Producers' Council, Inc.
**217-H FOURTH STREET, N.E.
CANTON 2, OHIO**

persimmon or turquoise. Utility Cabinet Co., 6924 Stanford Ave., Los Angeles, Calif.

Mobile Lighting Fixtures

Designed by Gerald Thurston, two new ceiling fixtures and one wall fixture have been added to the Lightolier line. The shades are made entirely of brass, with the exception of the white reflec-

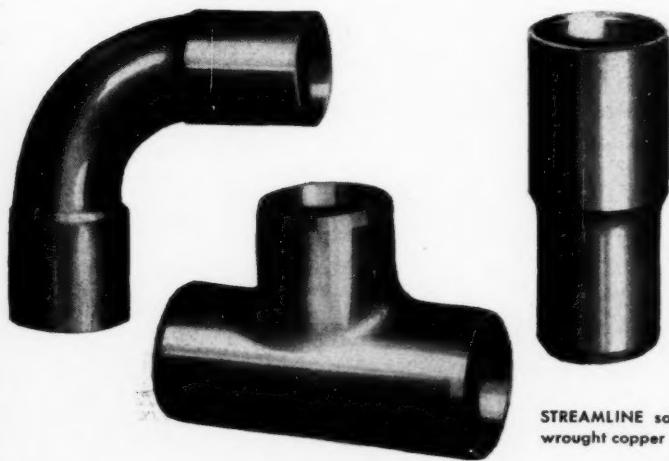
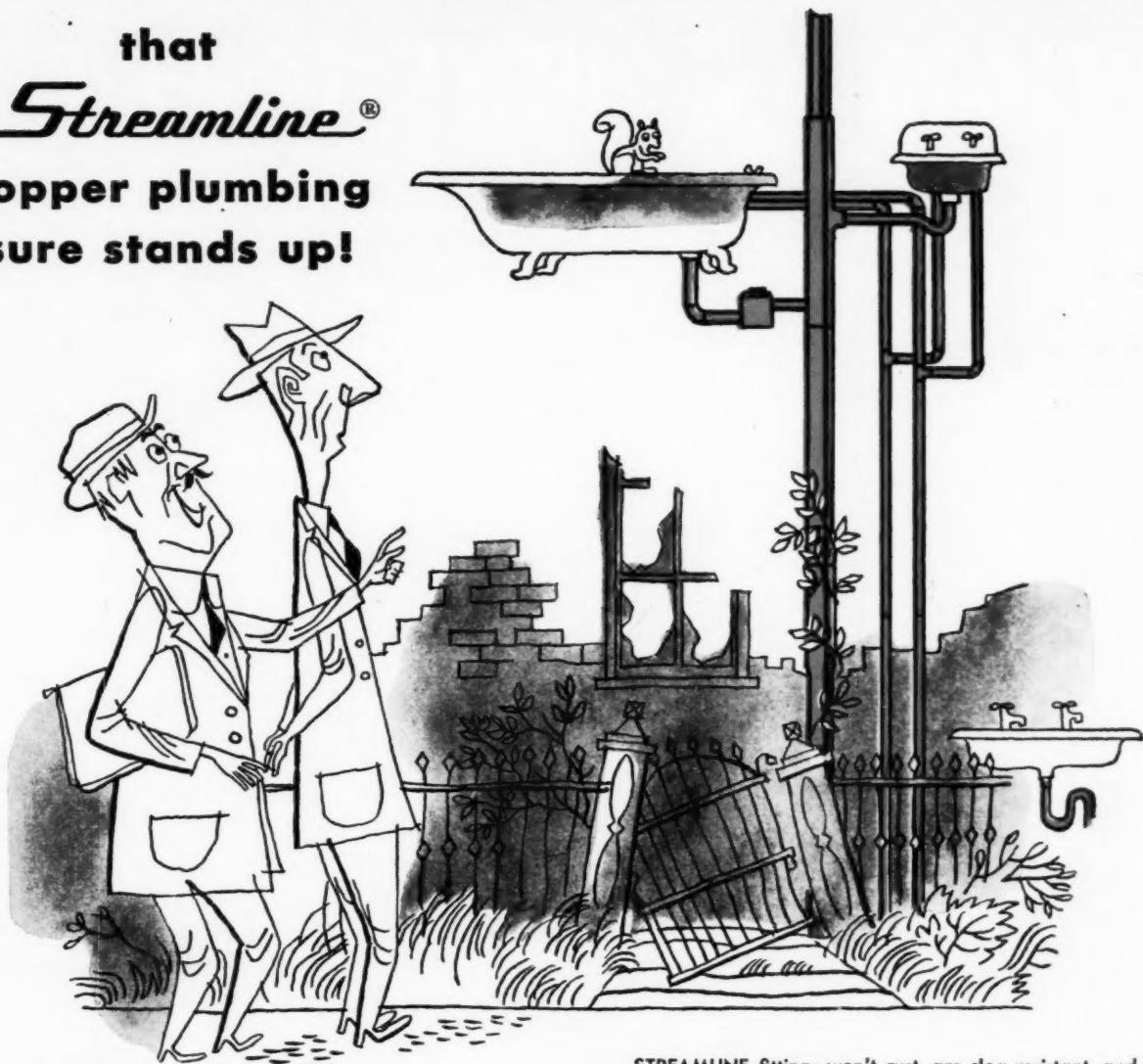


Suspended fixture of gleaming brass adds elegance to contemporary decor

tors, and are pierced to let light pinpoint out of the openings. Mobility in the ceiling fixtures is attained by raising and lowering a reel on the suspension cords. The wall fixture raises, lowers, swings from side to side and telescopes in and out. One of the ceiling fixtures suspends three inverted pierced brass buckets beneath a broad shallow reflector, measuring 25 in. The second ceiling light is smaller, with one bucket, and the reflector measures 17 in. Lightolier, Inc., 11 E. 36th St., New York, N.Y.

(Continued on page 226)

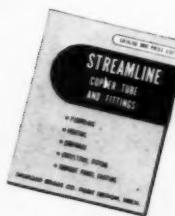
that
Streamline®
copper plumbing
sure stands up!



STREAMLINE solder type wrought copper fittings.



STREAMLINE threaded cast bronze fittings.



See your jobber for further information or write for catalog S-352 describing our complete line of STREAMLINE wrought copper and cast bronze fittings.

76

MUELLER BRASS CO. PORT HURON 7, MICHIGAN

MUELLER
BRASS
CO.
**STREAMLINE
PRODUCTS**

5

WAYS TO PICK THE

1 COMPARE CIRCULATION:

Architectural Record's architect and engineer circulation is at an all-time high. Marketwise, the Record's subscribers *verifiably* design—and specify the products that go into—83% of the dollar volume of all architect-engineer designed building, both non-residential and residential.

Architectural Record's coverage of building planning and specifying activity is continuously checked and continuously guided by *Dodge Reports*.

Behind the accuracy and completeness of *Dodge Reports* are . . . 900 trained Dodge news gatherers, operating from 15 district offices and 55 branch offices, covering 165,000 different sources of construction news with 2,215,000 personal calls a year, 1,660,000 phone calls, 334,000 letters and 1,360,000 miles of travel. 240,194,631 copies of 688,357 *Dodge Reports* were delivered in 1951.

2 COMPARE EDITORIAL CONTENT:

Architectural Record is the one magazine edited specifically for architects and engineers. And every issue of the Record covers the *full range* of the active architect's and engineer's design interest in a wide variety of building types, both non-residential and residential. Furthermore, Architectural Record is the one magazine whose editorial emphasis on individual *types* of buildings is adjusted continuously to the rate at which these buildings are being planned by architects and engineers as shown by *Dodge Reports*.

3 COMPARE READERSHIP:

Architects and engineers have voted Architectural Record their preferred magazine in 39 out of 45 reader preference studies *sponsored by building product manufacturers and agencies*.

4 COMPARE COSTS:

Architectural Record offers you concentrated coverage of the architects and engineers responsible for four-fifths of all architect-engineer designed building—at the lowest cost per page per thousand.

5 COMPARE ADVERTISING VOLUME:

Year after year (and again in 1952) more building product manufacturers buy more pages of advertising in Architectural Record than in any other architectural magazine.

In the first 10 months of 1952 Architectural Record carried 51% more pages of advertising than the second magazine, 81% more pages than the third magazine.



**Architectural
Record**

"workbook of the
active architect
and engineer"

119 West 40th St.
New York 18, N. Y.
LOngacre 3-0700

Mobile Infirmary, Mobile, Alabama.
First presented to architects and en-
gineers in Architectural Record.
Architects: Platt Roberts & Company
Photographer: Thigpen

E RIGHT ARCHITECTURAL MAGAZINE

FOR 1953

WHICH ARCHITECTURAL
MAGAZINE BEST SERVES
READERS AND ADVERTISERS?

**Ask Architects
and Engineers!**

Editorial values are the source of all advertising values. We urge you to find out for yourself what architectural magazine best serves architects and engineers. Ask them—they can tell you.

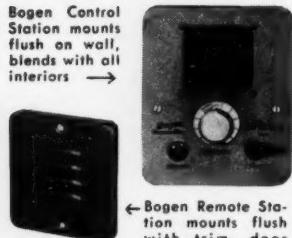
Plan for greater home
comfort, convenience
with Bogen
VOICE
INTER-COMMUNICATION
SYSTEMS



featuring

- INSTANT HOUSEWIDE
COMMUNICATION
- SUPERB REPRODUCTION
- NURSERY OR
SICKROOM MONITORING
- REMOTE DOORBELL
ANSWERING

Bogen Control Station mounts
flush on wall,
blends with all
interiors →



← Bogen Remote Station
mounts flush
with trim, door
molding or wall



Specify Bogen for the
comfort and conven-
ience of a truly fine
installation for modern
living. The smartly-
styled Bogen Home
Communo-phone is
outstanding in performance and
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remarkably flexible system, all
living areas — work,
play and service—can
be interconnected.
The flick of a finger
results in a hundred
energy-saving marvels
each day. Write for
Bulletin S-12.

MEMO Ask for literature
on the Bogen complete
SCHOOL SOUND SYSTEMS

Centralized School Systems are now
installed in leading schools and col-
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**DAVID BOGEN
CO., INC.**

29 NINTH AVE., NEW YORK 14, N.Y.

*A Quarter Century of
Electronic Specialization*

Architectural Engineering

PRODUCTS

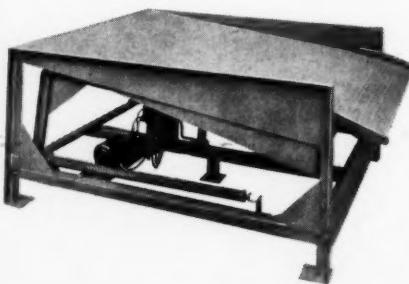
(Continued from page 222)

*Hardware for
Louvered Windows*

Louver Leader hardware for louvered windows fits all standard windows and can be adapted to fit any special size, according to the manufacturer. The hardware reportedly can be installed with a minimum of effort by an amateur or a professional, and is adaptable for replacement without remodeling as well as for original installations. Since the operating handle does not protrude into the room, there is no interference with draperies. The entire mechanism is made of stainless steel. Trinity Mfg. Co., 1045 Richmond St., Los Angeles 33, Calif.

Portable Loading Ramp

Instant, perfect alignment from any height truck bed to any height dock is reportedly provided by the Illo portable loading ramp. Available in



Loading ramp affords quick alignment of
any height truck beds and docks

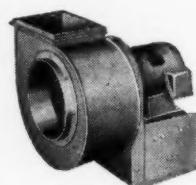
either manual or electrically powered models, the ramp features a full 24-in. hydraulically operated deck adjustment which enables trucks of any bed height to be loaded or unloaded easily, according to the manufacturer. Forklifts may be driven directly onto trucks, with maximum traction assured by a diamond plated deck. An adjustable throw plate reportedly can be easily raised or lowered for installation inside buildings without interfering with doors, and the plate can be locked in horizontal position during loading. Where installations are made in front of the platform instead of being recessed in it, leg sup-

(Continued on page 230)

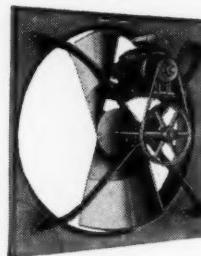
*A fan
for every need*

from
HERMAN NELSON

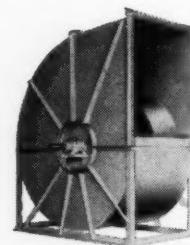
Direct Drive Unit Blowers
are available in
12 models. Wheel
size from 4" to
11". Choice of
speeds available
in each size.
These units may
be mounted on
floor, wall or
ceiling.



Belt Drive Propeller Fan. These versa-
tile units deliver maximum amount of
air effectively . . . quietly. Operate
horizontally or vertically. Wheel diam-
eters from 24" to 54". Capacities up to
36,000 c.f.m.



Centrifugal Fans
for every Class
I or Class II use.
Equipped with stat-
ically and dynami-
cally balanced air
wheels of most ad-
vanced design. More
than a hundred sizes
and speeds. Extra
quiet in operation.



ACCESSORIES

All Herman Nelson Centrifugal Fans and Unit Blowers are available for any discharge and rotation. Weather-proof covers, vibration dampeners, access doors, drain connections, inlet screens, inlet vane control, outlet dampeners and acid resistant finish available.

AAF
Write for detailed infor-
mation about any type
Herman Nelson Fan
to Dept. AR-12.



American Air Filter
COMPANY, INC.
HEATING AND VENTILATING DEPT.
LOUISVILLE 8, KENTUCKY



...FROM

HERMAN NELSON



Here is the most diversified line of packaged centrifugal fans available. There are 103 models with capacities from 360 to 18,300 c.f.m. There are direct drive, belt drive, slow speed and non-overloading types, each carefully designed to do a specific job well. More and more architects, engineers and contractors are specifying and installing Herman Nelson Unit Blowers for the wide range of

models insures a unit of the exact capacity needed. Herman Nelson Unit Blowers are compact, easy to install and have inherent ability to deliver or exhaust large quantities of air efficiently.

Herman Nelson Unit Blowers pace the field because constant engineering development and research has resulted in functional, highly efficient units—the result of 45 years of experience in the production of heating and ventilating equipment.

You can judge a unit blower by its fan wheel

The heart of every unit blower is its fan wheel and here is where Herman Nelson superior engineering shows up. All the latest findings of aerodynamic science are put to work in the design of these fan wheels.

Every fan wheel installed in Herman Nelson Unit Blowers is statically and dynamically balanced before assembly. After assembly, the entire unit is carefully tested at the speed it is to operate within the system. It is also tested at maximum recommended speeds.



American Air Filter COMPANY, INC.
HEATING AND VENTILATING DEPT.
LOUISVILLE 8, KENTUCKY

DURAPLASTIC Aids Proper Concrete Placement in World's Biggest Bus Terminal

To get a more uniform, more workable mix for New York City's new \$24,000,000 bus terminal, Turner Construction Company used Duraplastic* air-entraining portland cement — 31,000 barrels in all. Duraplastic requires less mixing water for a given slump. It gives a more plastic mix. Such mixes aid proper placement... result in an improved surface appearance.

The greater plasticity of Duraplastic concrete is due to billions of tiny air bubbles entrained in the mix. They minimize water gain and segregation. As a result, finished concrete made with Duraplastic is also fortified against the effects of freezing-thawing weather.



General Contractor: Turner Construction Co., New York, N. Y. Ready-mixed concrete supplied by Metropolitan Sand & Gravel Co., New York, N. Y.

YET DURAPLASTIC* COSTS NO MORE

OFFICES: Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

It sells at the same price as regular cement. Complies with ASTM and Federal Specifications. For free booklet telling how Duraplastic can help you on your next job write: Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company

ATLAS®

DURAPLASTIC

AIR-ENTRAINING PORTLAND CEMENT

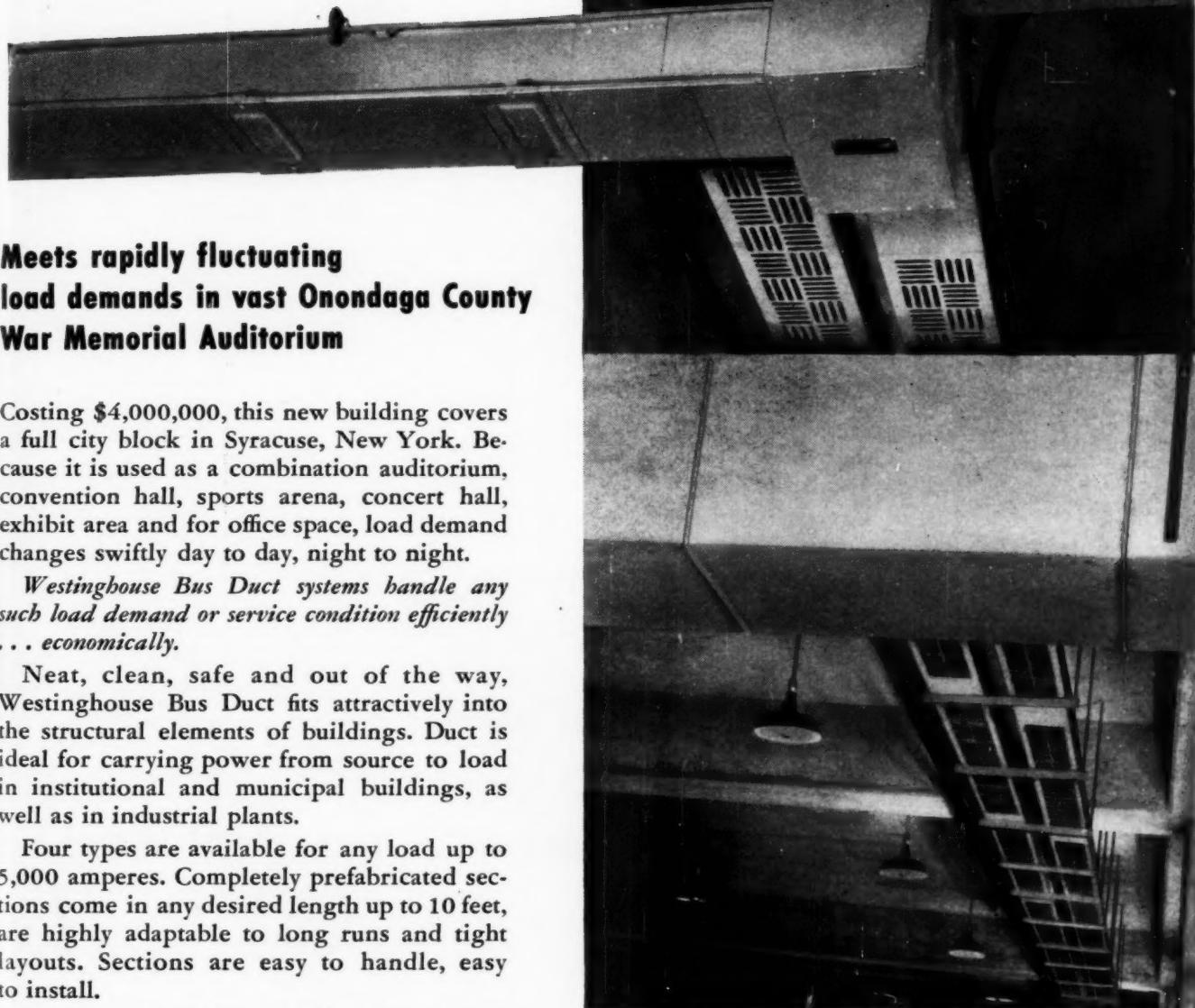
Makes Better Concrete at No Extra Cost



AR-D-131R

"THE THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—NBC Network

BUS DUCT IS FLEXIBLE



Meets rapidly fluctuating load demands in vast Onondaga County War Memorial Auditorium

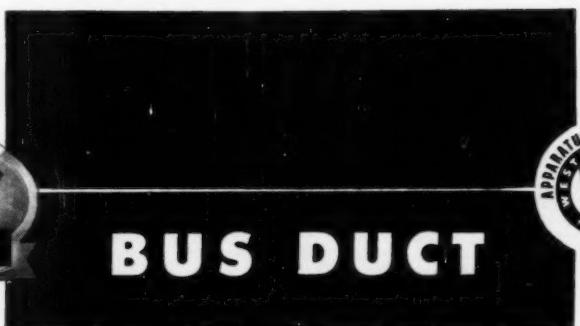
Costing \$4,000,000, this new building covers a full city block in Syracuse, New York. Because it is used as a combination auditorium, convention hall, sports arena, concert hall, exhibit area and for office space, load demand changes swiftly day to day, night to night.

Westinghouse Bus Duct systems handle any such load demand or service condition efficiently . . . economically.

Neat, clean, safe and out of the way, Westinghouse Bus Duct fits attractively into the structural elements of buildings. Duct is ideal for carrying power from source to load in institutional and municipal buildings, as well as in industrial plants.

Four types are available for any load up to 5,000 amperes. Completely prefabricated sections come in any desired length up to 10 feet, are highly adaptable to long runs and tight layouts. Sections are easy to handle, easy to install.

Get the complete details from your Westinghouse Representative or write for B-4272-A, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-30109



Only PLUGMOLD 2000 gives you SWITCHED and HOT OUTLETS in the SAME Receptacle!

**WIREMOLD's exclusive
SNAPICOIL eliminates
multiple connections
between short lengths -
receptacles are pre-wired
in 50 foot coils.**



The Snapicoil 3-wire duplex receptacles of the new Plugmold 2000 multi-outlet system have one side switched and one side "hot"—this exclusive Plugmold feature means extra convenience in homes, stores, offices . . . everywhere.



The same size Plugmold 2000 raceway also accepts Snapicoil 2-wire duplex all "hot" or NEMA 2-wire grounded receptacles. Only one size raceway is needed on the job!



Plugmold 2000 is easier, faster and cheaper to install!

*Write today for the new,
free Plugmold 2000 book!*

PLUGMOLD 2000

**WIREMOLD'S New
multi-outlet system**

THE WIREMOLD COMPANY
Hartford 10, Connecticut

Architectural Engineering

PRODUCTS

(Continued from page 226)

ports are furnished. The power unit consists of a 110-v single-phase $\frac{1}{2}$ -hp motor directly connected to a $\frac{3}{8}$ -in. standard Viking 350-lb pressure hydraulic pump. The dock is ready to operate as soon as it is plugged into any light socket. It is counterbalanced by heavy-duty tension-type coil springs to eliminate additional load on truck beds and has a capacity of 20,000 lbs. Shipped as a unit, it is completely assembled and ready to operate. John B. Illo Co., 2414 E. 57th St., Los Angeles 58, Calif.

Motorized Floor Sweeper For Industrial Plants

An improved model Multi-Clean motorized industrial plant sweeper is reported to accomplish the heaviest industrial sweeping jobs in a fraction of the time required by push-broom methods. The machine combines a rotary brush sweeper and a heavy-duty vacuum



Rotary brush sweeper and vacuum cleaner are combined in motorized unit

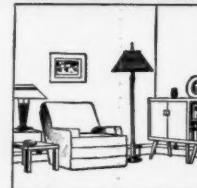
cleaner into an integral unit. Sweeping is done by eight 36-in. hardwood, Palmyra filled brushes welded into a single circular unit 17 in. in diameter and 36 in. long. The effective sweeping area may be increased to 48 in. by the employment of a side brush attachment. The vacuum is built-in and is mounted directly on the engine shaft, and a $1\frac{1}{2}$ -2 hp Briggs and Stratton air-cooled engine delivers power sufficient to operate the sweeper at a speed of up to 4 mph. Speed, efficiency

(Continued on page 234)

PLUGMOLD 2000

Multi-Outlet System
gives your homes
a *plus*
appeal!

...and this New system
by WIREMOLD is
FASTER, EASIER
CHEAPER to Install!



Plugmold 2000 is your perfect answer to home buyers who insist on utmost convenience ... it provides a double convenience outlet every 30 inches around every room, with closer spacings available.

In addition, you can now have both "hot" and switched outlets in the same receptacle.

You'll save time and installation costs — Wiremold's famous Snapicoil, pre-wired in 50 foot coils is installed in one, long, continuous run.

Plugmold 2000 is easily installed in new homes; and in homes you're modernizing without tearing out walls or floors.

Write today for the new, free Plugmold 2000 book.



PLUGMOLD 2000

**WIREMOLD'S New
multi-outlet system**

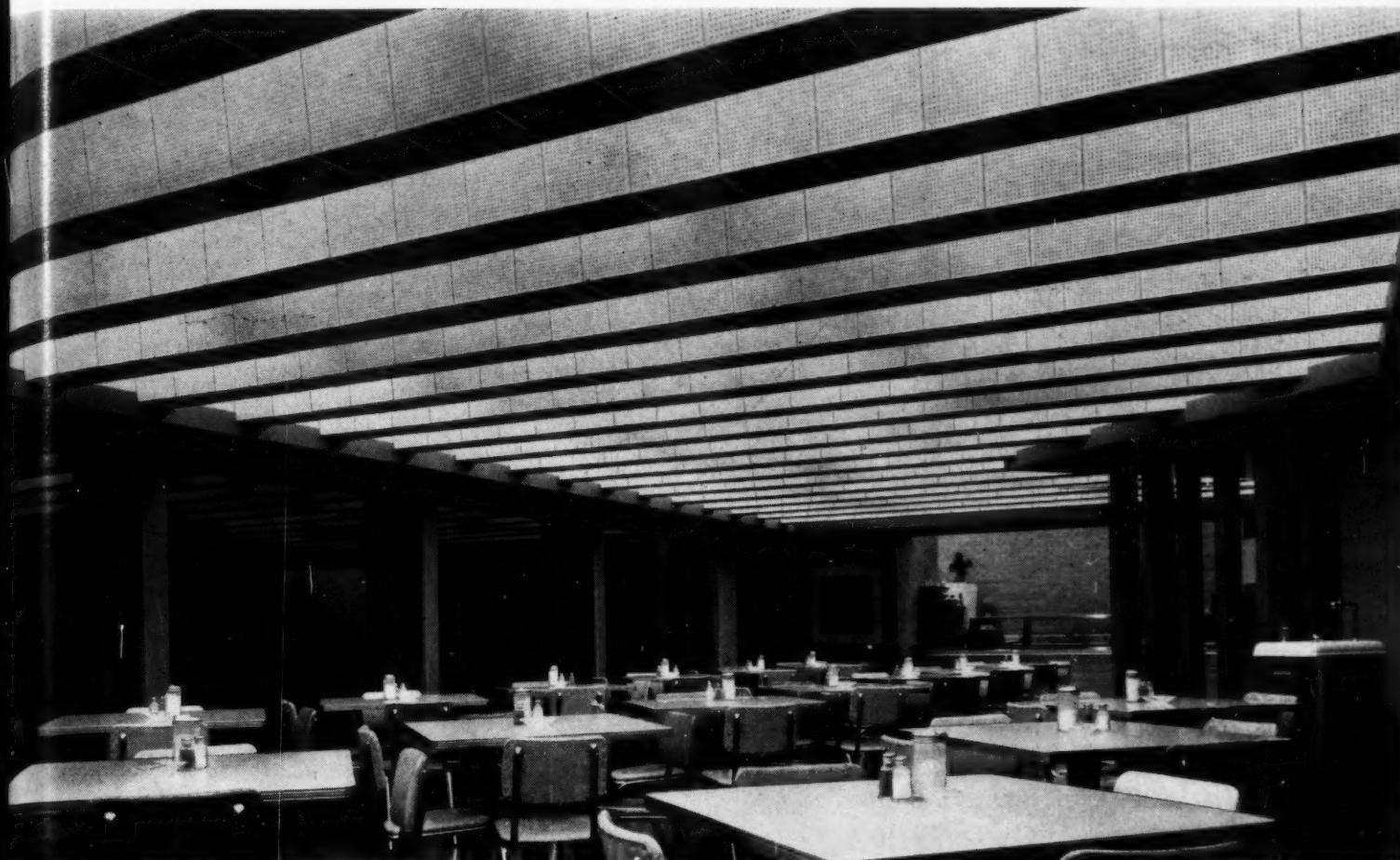
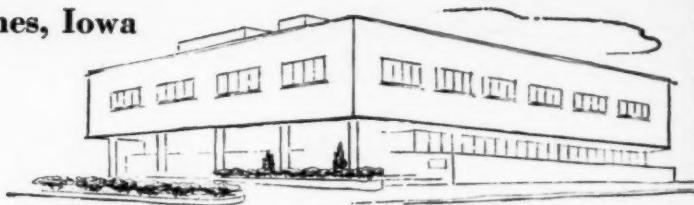
THE WIREMOLD COMPANY
Hartford 10, Connecticut

STATE AUTO INSURANCE BUILDING, Des Moines, Iowa

Architects: Brooks and Borg

General Contractor: A. H. Newman Bros., Inc., Des Moines

Acoustical Contractor: Queal Lumber Co., Des Moines



Imaginative use of acoustical materials with a striking beamed effect provides both sound and light conditioning in the State Auto Insurance Building's cafeteria. The ceiling area is increased, thus creating extra surface for acoustical treatment. The vertical tiles also act as baffles and reflectors for the lighting fixtures.

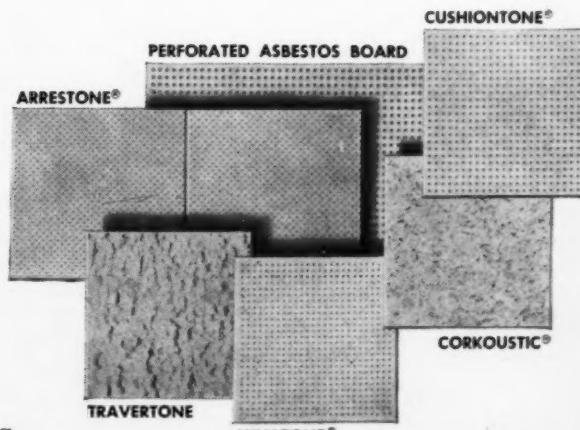
Armstrong's CushionTone, a perforated wood fiber tile, is used throughout the building. To CushionTone's economy, efficiency, and beauty, the architects added fire

safety by specifying the special flame-resistant finish.* Easy installation and repaintability are other features offered by this popular acoustical material.

The most complete line in the field, Armstrong's Acoustical Materials offer you a wide range of special features. Your Armstrong Acoustical Contractor will give you expert advice without obligation. For the free booklet, "How to Select an Acoustical Material," write to Armstrong Cork Company, 2412 Stevens Street, Lancaster, Pa.



* In the building's office areas, the flame-resistant paint finish of CushionTone adds to fire safety. This finish meets Federal Specification SS-A-118a for a "slow-burning" material.



ARMSTRONG'S ACOUSTICAL MATERIALS

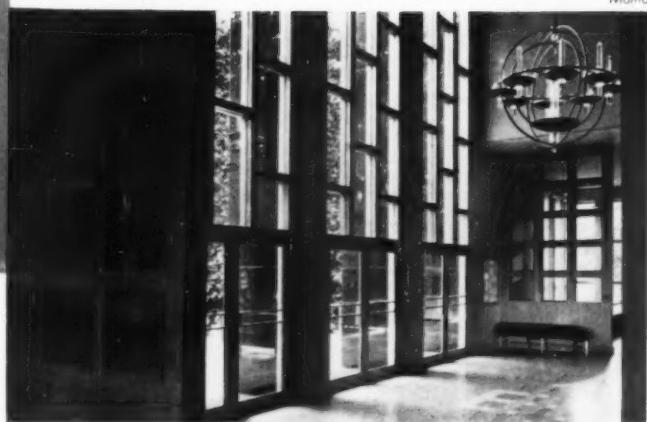
*First Church of Christ, Scientist,
New Haven, Connecticut*

*Douglas Orr, Architect,
New Haven, Connecticut*

*Douglas Orr,
Architect of*

First

Monitor



Interior view, showing front entrance

Douglas Orr, Architect

Church of Christ, Scientist,

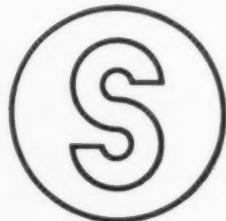
New Haven Conn.

tells how Architectural File saves valuable time.

"In our work, we have to know the full particulars about hundreds of building products before we can specify.

"Having Sweet's Architectural File on hand saves us valuable time in obtaining this information because it is the most comprehensive collection of up-to-date manufacturers' catalogs available. We'd be seriously handicapped without it.

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DIVISION OF F. W. DODGE CORP., 119 WEST 40TH STREET, NEW YORK 18, N. Y.

FOR SAFETY'S SAKE

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Longer Lasting
CHEMONITE
FOUNDATION LUMBER"**

*Yes, I'm an
Architect...*

I design small homes, and for complete protection against decay and termites — at a lower cost—I always specify..

BAXCO

CHEMONITE

PRESSURE TREATED LUMBER

TERMITE & DECAY RESISTANT

- CHEMONITE was developed by University of California Scientists.
- CHEMONITE has been proven by over 20 years of use.
- CHEMONITE resists termites and wood-decaying fungi.
- CHEMONITE is non-leaching, clean, odorless and paintable.
- CHEMONITE gives permanent protection to all wood products.
- Approvals: Federal and State specifications; American Association of Highway Officials; Los Angeles City Building Code.

GO GO with CHEMONITE

A SAFE Non-leaching Wood Preservative

FREE brochure gives you the facts!

Write for FREE brochure. Learn why leading specifiers turn to Chemonite for better, lower cost wood protection!

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Baxco Corporation
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J. H. Baxter & Co. of Ore.
P. O. Box 752, Eugene, Ore.



Architectural Engineering

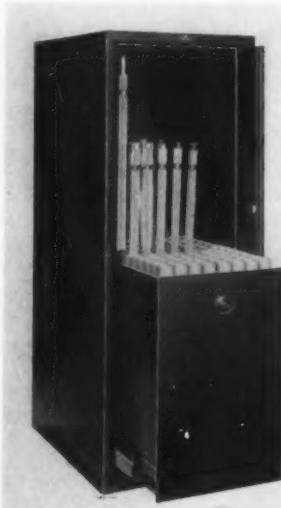
PRODUCTS

(Continued from page 230)

and economical operation of the machine are reported by the manufacturer to cut plant maintenance time and costs considerably. Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.

Vertical File For Blueprints

The Kraftbill V-96 Vertical Rollfile is an all-steel cabinet for storing rolled blueprints, tracings, drawings and maps. Measuring 23 in. wide, 29 in. deep and 62 in. high, the cabinet has 96 storage tubes. Letters and numbers on drawer ledges permit indexing of tubes, and



File permits convenient, safe storage of blueprints, drawings, maps

ball bearings reportedly insure quiet, easy opening and closing even when fully loaded and under maximum extension. The door, which retracts into the cabinet body when opened, features a counter-sunk bronze handle and a tamper-proof lock. When closed it is said to provide protection against fire, dust, dampness, rodents and insects. Furnished in gray or olive green baked enamel with brushed bronze trim. Ross-Martin Co., Box 800, Tulsa 1, Okla.

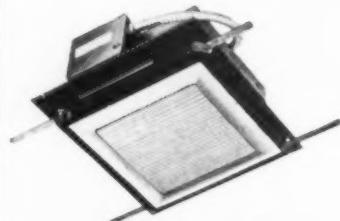
(Continued on page 238)

BE PLUMB SURE

with...



Blo-Fan
Electric
Ceiling Ventilators



Pry-Lite
Recessed
Lighting Fixtures



AEROFAN
Automatic
Sidewall Ventilators



Glomaster
Infra-Red
Wall Heater

*Trade Mark Reg.

PRYNE & CO.

(Rhymes with fine and means it)

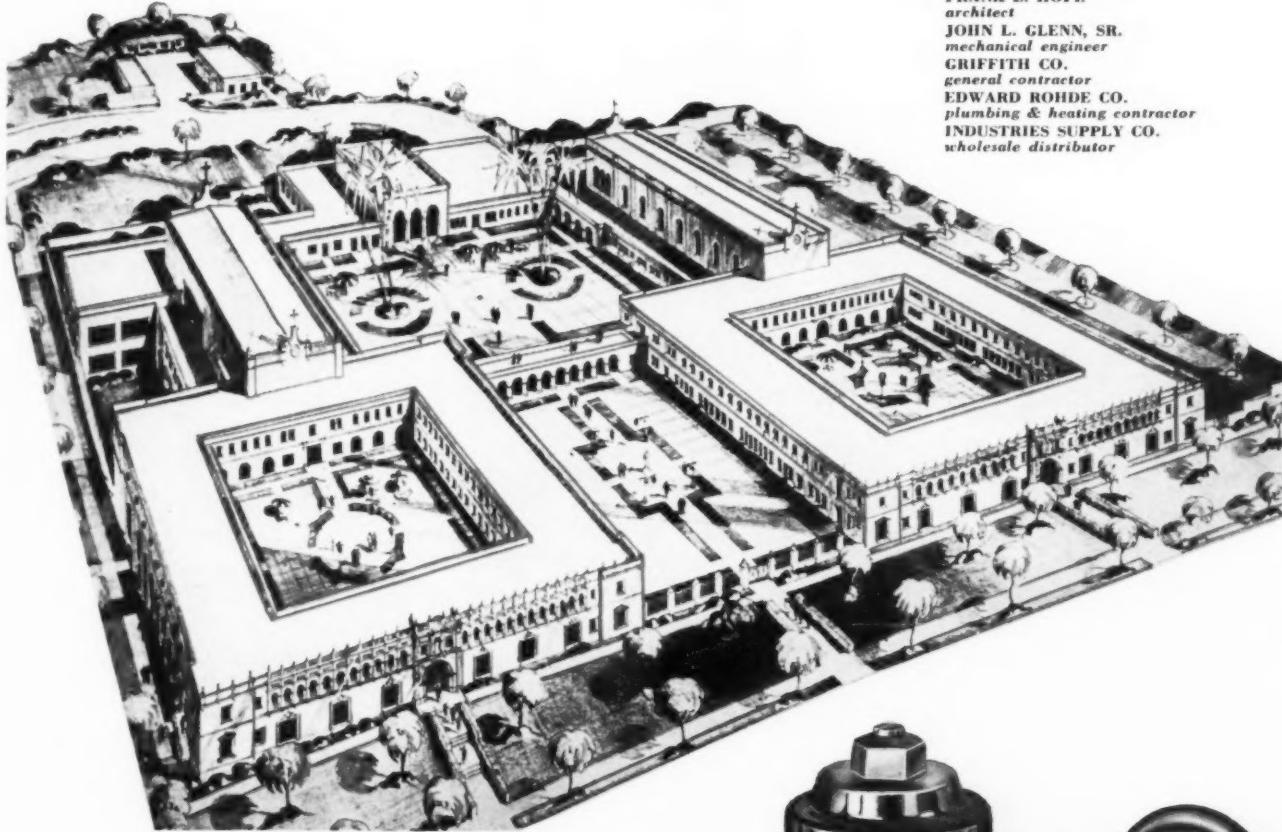
Box R-122, Pomona, California

124 Adams St., Newark, N. J.

Over 700 wholesalers in more than 400 cities.

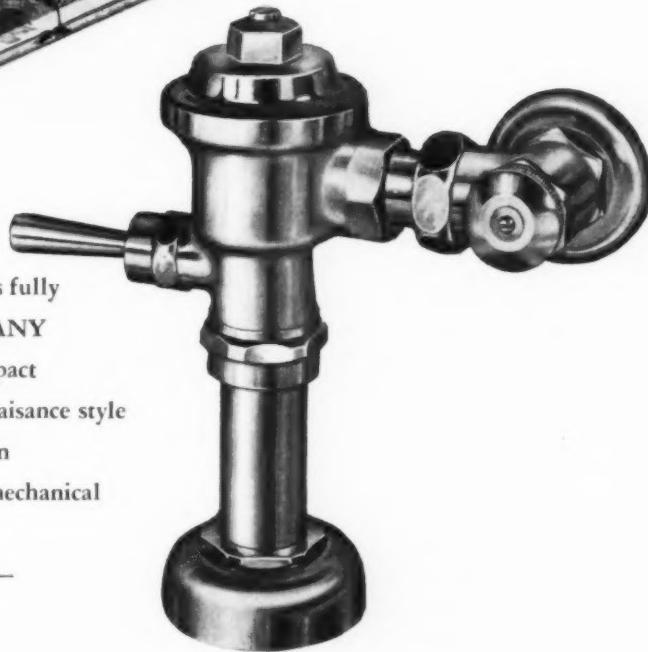
Warehouses: Los Angeles, San Francisco, Chicago, Atlanta

And in San Diego - A FUTURE OF FAULTLESS SERVICE



SAN DIEGO COLLEGE FOR WOMEN
San Diego, California
FRANK L. HOPE
architect
JOHN L. GLENN, SR.
mechanical engineer
GRIFFITH CO.
general contractor
EDWARD ROHDE CO.
plumbing & heating contractor
INDUSTRIES SUPPLY CO.
wholesale distributor

Appropriate perhaps to lower California, the flavor of old Spain is strongly felt in the design of this fully integrated college campus—an unusual COYNE & DELANY installation now under completion. In this compact scheme, the traditional externals of the Spanish Renaissance style are blended nicely with the most progressive in appointments and equipment. Contributing to a finer mechanical system through their simplicity and unmatched design will be a large number of flush valves by DELANY—the fastest growing name in flush valves.



Under trying water conditions, an invaluable feature of all DELANY VALVES is the protected monel metal bypass shown at left. In this trouble-susceptible area in all flush valves, the use of monel precludes corrosion. Further real protection of the minute orifice against clogging by sand and debris is afforded by a fine mesh monel screen. It is sluiced clean with every flush, limiting the need for periodic dismantling and cleansing.

COYNE & DELANY CO. • 834 KENT AVE. • BROOKLYN, NEW YORK

IN CANADA: THE JAMES ROBERTSON CO., LTD.

DELANY
Flush
VALVES

Since
1879

PRODUCTS

(Continued from page 234)

Convection Electric Heating System

A low cost type of convection electric heating with a built-in thermostat in each unit for maximum efficiency is reportedly provided by the *Circle-Air* convection heating system. The thermostat provides individual control of the temperature in each room and is said



Architects Lundeen and Hilfinger, Bloomington, Ill., designed this modern building for the Kemp Grain Co. of Lexington, Ill. Rilco Laminated wood beams are 36' long, spaced 6½' O.C. Rilco V columns are 10' 4" high.

Dramatic new designs with **RILCO Laminated BEAMS and V COLUMNS**

RILCO laminated beams and V columns LOOK expensive, so they're particularly valuable when you want a fine building at moderate cost. The richness of the wood warms and softens utilitarian structures . . . gives a luxurious, inviting atmosphere.

Yet the material cost is surprisingly low. And all members are smoothly-surfaced, precision cut and drilled for assembly hardware, to make erection fast and simple.

These custom fabricated beams and columns offer unlimited possibilities in designs of all types and costs. For information on specific installations, write for literature or see our 16-page catalog in Sweets.

RILCO

RILCO Laminated PRODUCTS, INC.

2518 First National Bank Building, St. Paul 1, Minnesota

Each unit in convection electric heating system has built-in thermostat

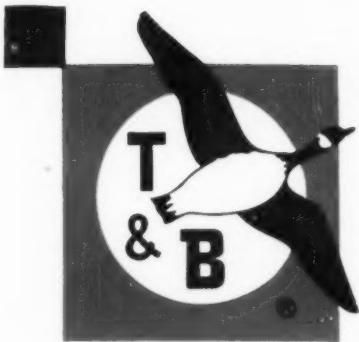
to help reduce heating costs. The system is approved by Underwriters' Laboratories and eliminates the need for furnaces, pipes, chimneys and fuel storage. Cost of installation is described as very low and operating costs are said to be comparatively low in most locations. The system employs a concealed fin-type heating element which prevents accidental burns and makes it possible for children to play safely near the units, according to the manufacturer. Five sizes are available from 700 to 2800 with Btu ratings of from 2400 to 9600 w. The units are encased in gray metal cabinets which can be placed against the wall or recessed. Paley Mfg., Co., 244 Herkimer St., Brooklyn 16, N. Y.

**Packaged System
For Water Cooling**

A new *Filtrine* completely packaged circulating system supplies chlorine-free water to permanent wall fountains in all types of buildings which require from three to 300 water stations. The system is reported to streamline engineering of central water cooling and to reduce installation time and cost. The system is said to meet heavy hourly demand by producing up to 400 gal. per hr of water at 50 deg. In addition, it generates up to 150 gal. extra capacity to meet periodic peak requirements for rest and lunch periods.

All models are constructed for long service. Larger units are designed for basement installation, while smaller models may be mounted either on floors or walls in service closets or any concealed location. A heat-protected heavy-duty storage cooler has balanced evaporators to prevent pressure drop. A bronze fitted pump with enclosed impeller circulates water at uniform temperature to all outlets. Foreign tastes and odors and microscopic particles of rust, algae and sediment are all removed by a filter and rectifier-dechlorinator assembly. The unit is packaged in a heavy-gage angle-frame housing which will accommodate any make refrigerating machine. This can be factory-installed with all approved automatic controls, making the complete unit available for fast, on-the-job connection to power, water and return connections. *Filtrine* Mfg. Co., Dept. AI-10, 53 Lexington Ave., Brooklyn 38, N. Y.

(Continued on page 242)



TRI-FLEX and AEROVANE REGISTERS now equipped with

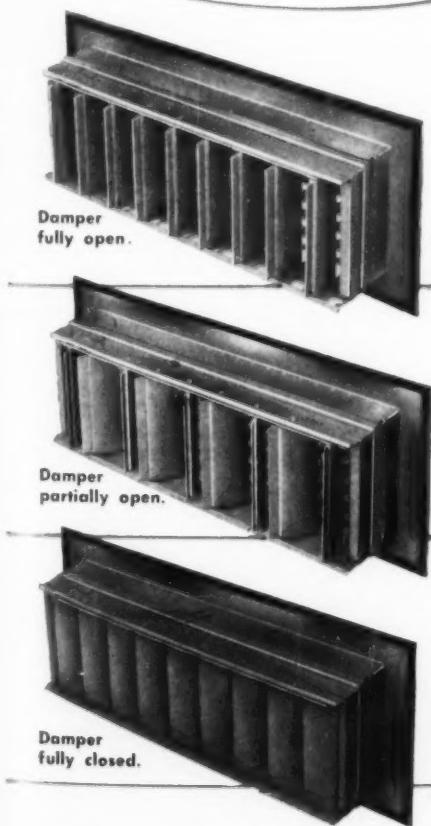
Opposed Blade Dampers

KEY OPERATOR FOR OPPOSED BLADE DAMPER

Blades are regulated by key operator which may be removed or tapped permanently into place.



Showing TRI-FLEX T-647
Double Deflection Register
with Opposed Blade Damper



TRI-FLEX Supply Air Registers and
AEROVANE Return Air Registers —
specified and installed on important air conditioning
jobs — are now constructed with opposed blade dampers.

This improved damper unit insures uniform distribution of air over the entire face of the register . . . and provides positive damper setting in any position from fully open to fully closed regardless of system pressure. Set in a rigid steel frame, blades are formed for extra strength and stiffness, and overlap when closed, eliminating any possibility of air leakage. Blades are regulated through the face of the register by means of a key operator which may be removed or tapped permanently into place.

For complete information and size selection data for TRI-FLEX and AEROVANE Registers and Grilles, write for a copy of Catalog No. 200.

TUTTLE & BAILEY INC

NEW BRITAIN, CONNECTICUT

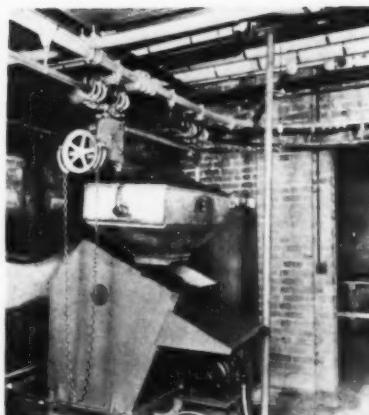
PRODUCTS

(Continued from page 238)

Coal Conveyor

A newly developed Ney coal conveyor is said to simplify the delivery of coal to stokers in office buildings, schools, apartments, hospitals and other institutions. The conveyor employs a galvanized steel "tub" which holds approximately 800 lbs of stoker coal. The tub is lifted by means of a 40-to-1

ratio chain hoist to an overhead double angle steel track extending from the coal pile to the stoker. Where the overhead track cannot be suspended from the ceiling, it can be supported from arches set in the floor. In locations where the ceiling is too low for a complete track, a rubber-tired truck is available for conveying the tub from the coal pile to the point where the track starts. The overhead track is available in straight and curved sections, and switches are also available. Inside dimensions of the tub are 39 in. long, 22 in. wide and



Conveyor transports coal to stokers in large buildings, holds 800 lbs



W. K. Kellogg Center
Continuing Education Building
Michigan State College • Lansing



source of pride for Michigan State, all hotel men and Van

- The illustration above shows the regular dining room serving section of the main kitchen of the New Continuing Education Building at Michigan State College . . . a part of the new W. K. Kellogg Center. The equipment here is only a part of Van's contribution.
- Here and throughout Architect Lewis J. Sarvis of Battle Creek allotted space as Van engineering indicated was required by the unusual problem of serving up to 150 house guests in the hotel and up to 1200 in the banquet room and private dining rooms for the large groups who will come for refresher training.
- Such customers of distinction throughout Van's Century of Service have caused many architects to rely on Van for food Service equipment counsel.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

Branches in Principal Cities

429 CULVERT STREET

CINCINNATI 2, OHIO

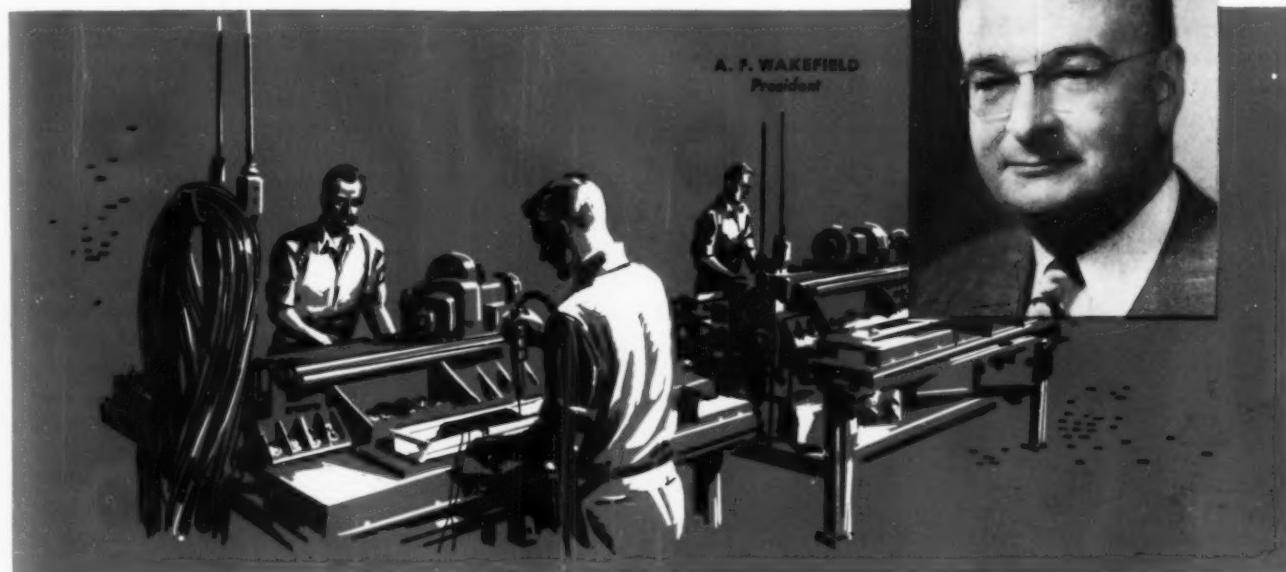
19½ in. deep. The load is released through a sliding panel in the bottom and the coal is fed by gravity directly into the hopper of the stoker, providing for automatic refilling as the coal is withdrawn from the hopper. Specially designed tubs and other standard tubs are available. Ney Mfg. Co., Canton, Ohio.

Thermostatic Device For Fire Protection

Described as a new principle of fire detection and property protection, the *Delect-O-Stat*, a thermostatic warning device, is designed to provide complete fire detection service for business, industry, public buildings, farms and private homes. The device has two temperature-sensitive contacts. The first closes at a lower temperature than the second. In this way, the device can detect local fires and report them to the occupants of a structure, who may then extinguish the blaze themselves. In case the first warning goes unheeded, the second contact sets off other audible or visual signals either outside the building or at a central control station.

The device also has a third "cold detector" contact, which activates warning signals when temperatures drop, thus providing protection against damage to perishable merchandise as a result of frost and cold. After activation, contacts return to normal open position automatically and do not require resetting. The device has an overall temperature range of from 10 to 200 F. The units are reportedly easy to install and can be mounted anywhere. The manufacturer offers free engineering and consultation service. Racine Equipment and Material Co. Inc., 926 State St., Racine, Wis.

Here's why *Wakefield* uses **CERTIFIED BALLASTS** in all their fluorescent fixtures



"We equip all our fluorescent fixtures with Certified Ballasts because we find our distributors, the contractors who make the installation and the users all are more satisfied with results when Certified Ballasts are installed," says A. F. Wakefield, president of The F. W. Wakefield Brass Company, Vermilion, Ohio.

His conviction is shared by many other manufacturers who have learned that CERTIFIED BALLASTS assure—



Full Lamp Life

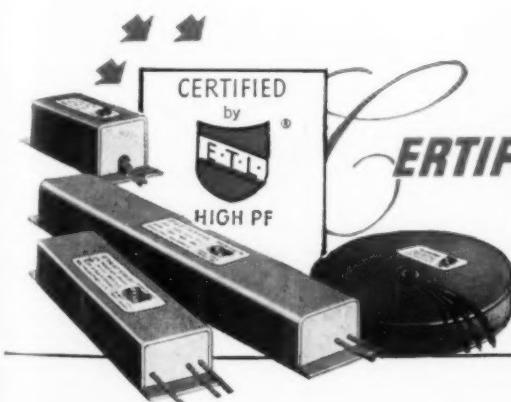
Rated Light Output

Maximum Ballast Life

CERTIFIED BALLASTS are made to precise specifications, then tested by Electrical Testing Laboratories, Inc., which certifies they conform to these high standards.

Write for complete information on the types of CERTIFIED BALLASTS available from each participating manufacturer.

Participation in the CERTIFIED BALLAST program is open to any manufacturer who complies with the requirements of CERTIFIED BALLAST MANUFACTURERS.



CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting

2116 KEITH BLDG., CLEVELAND 15, OHIO

LITERATURE

(Continued from page 184)

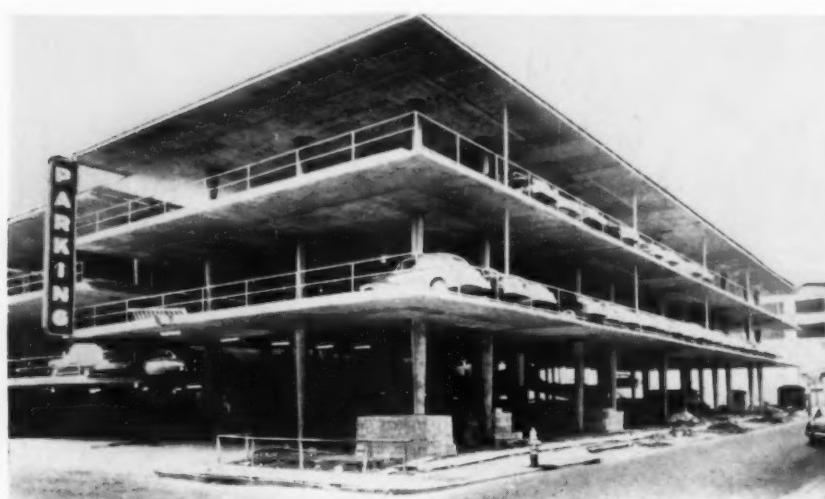
Laboratory Furniture

Moduline Unitized Steel Furniture for the Hospital and Laboratory. Brochure illustrates features of the manufacturer's line of sectional steel sinks, cabinets and other units for laboratories. Design and construction is discussed and each piece is shown in drawings, with dimensions listed below. Particulars of the

manufacturer's equipment planning and contract service are included. 8 pp., illus. A. S. Aloe Co. and Subsidiaries, 1831 Olive St., St. Louis 3, Mo.

Gymnasium Seating

Wayne Rolling Gymstands, Catalogue R-52. Constructional and operational features of the manufacturer's rolling gymstands are described and illustrated with photographs and drawings. Dimensions and specifications are included. Wayne Iron Works, Wayne, Pa.*



New Orleans parking garage, built in 30 units, cost only \$400 per car space. Unit is a 32' slab cantilevered on columns spaced 16'. Overlapped cantilevers between units span 32', make space for another car. In cross section slabs are 66' 3".

A car for every 200 sq. ft. — all within 3 minutes of the street

Designed to provide quick-access parking for as many cars as possible within its site dimensions, this garage was built at extremely low cost in a series of 30 independent units, each a flat slab cantilevered on tapered columns hinged at their base, with overlapped cantilevers doubling the span between units.

Implicit in clean, light, economical construction like this is the closely

calculated use of reinforcing steel in concrete of predetermined strength.

Such material is available in ready-mixed concrete of uniform batch design, processed in truck mixers or agitators which have the capacity, drum speed and mixing action, and the accuracy of water control necessary to insure proper and complete mixing of every batch. Such truck mixers are identified by Rating Plate.

Look for this Badge of Dependability on Truck Mixers:

You have a right to insist on this Rating Plate on any truck mixer that serves your jobs. It is available to all who comply with the quality standards established by the National Ready Mixed Concrete Association and the Truck Mixer Manufacturers Bureau.



These member manufacturers comply with Bureau standards:

BLAW-KNOX DIVISION
Pittsburgh, Pa.
CHAIN BELT COMPANY
Milwaukee, Wis.

CONCRETE TRANSPORT MIXER CO.
St. Louis, Mo.
THE JAEGER MACHINE COMPANY
Columbus, Ohio

THE T. L. SMITH COMPANY
Milwaukee, Wis.
WORTHINGTON PUMP & MACHINERY CORP.
Dunellen, N.J.

How to Build Fireplaces

Successful Fireplaces and How to Build Them. Fifteenth edition of this booklet contains designs for all types of fireplaces, including outdoor barbecues and indoor traditional and contemporary. Photographs, sketches and details of construction are given, and a table of fireplace dimensions gives complete recommended dimensions and installation procedures for the fireplace of varying widths. Information is also included for fireplace equipment such as screens, fire baskets, fuel containers, fire lighters, etc. 77 pp., illus. Price 50 cents. The Donely Bros. Co., 13949 Miles Ave., Cleveland 5, Ohio.*

Insulated Pipe

Durant Pre-Sealed Insulated Pipe, Bulletin 6C. Brochure describes manufacturer's pre-sealed insulated pipe for underground and weather-exposed locations where piping systems are used to convey hot or cold liquids or gases. Information on special features, application, design, fabrication and construction are included together with photographs, drawings and specifications. 4 pp., illus. Durant Insulated Pipe Co., Palo Alto, Calif.

Cold Cathode Lighting

(1) *CELine Cold Cathode Lighting;* (2) *Designing With Light;* (3) *School Lighting at Its Very Best.* The first of these booklets is a general discussion of features and advantages of the manufacturer's cold cathode lamps. The other two deal with specific applications for the lamps in classroom lighting and lighting for special shapes and contours. Features, dimensions, electrical and construction data and illustrative drawings are included. Each 4 pp., illus., Chicago Electrode Laboratories, Inc., 220 N. Fourth St., St. Charles, Ill.

LITERATURE REQUESTED

Clare Henry Day, Architect; Richard I. Mitcham, Architect, Suite 7, Investment Building, 105½ Orange St., Redlands, Calif.

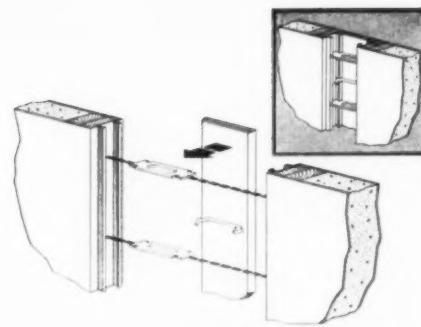
Earl C. Hayes, Jr., 718 Sixth St., Portsmouth, Ohio.

J. Bertram King, Architect, 265 Charlotte St., Asheville, N. C.

Leslie C. Searle, Jr., Architectural Draftsman and Student, 311 Village Dr., Syracuse, N. Y.



Birch Weldwood Movable Partition, with glazed sections, in offices of Doehler-Jarvis Co., Toledo, Ohio.
Installation by Detroit Partition Co.



Exploded view shows how metal keys fit into metal channel keyways to provide a positive, rigid interlock between partition panels. Oval openings in keys afford space for BX electric cable. Note spring steel clip on cover piece that snaps on, closing openings between panels.

Weldwood Movable Partition with vertical cover pieces and base removed, showing BX electric cable and outlet boxes in place.

FLEXIBLE enough for the FASTEST-GROWING CLIENT

And for fire safety and beauty don't overlook Weldwood Fire Doors. Beautiful, practical, they carry the Underwriters' Label for all Class B and Class C openings. The Weldwood Stay-Strate door is of similar construction, except that the edge banding is not fire-proofed. It is a handsome, non-warping door of wide usefulness.

And beautiful enough for the most critical and discriminating. That describes Weldwood Movable Partitions with their handsome flush hardwood faces. They are certainly as flexible as any growing firm's needs.

Door panels and wall panels may be interchanged. A single section may be taken out without disturbing panels next to it. And endless modifications in arrangement may be made *when and where they are needed*, quickly and easily.

Unique metal keys interlock the modular panels firmly together, yet unlock with ease. Each joint between panels provides a channel for electric cables. Panel units come in 2', 2½', 3', 3½' and 4' widths. And in practically any wood face desired.

Partition types include cornice and ceiling height, glazed railing and low railing partitions. Wall sections include door, glazed and solid types.

The mineral core used in all these panels is the same fireproof core material used in Weldwood Fire Doors*. It provides the Weldwood Partition Panel with high sound absorption, twice that of 2 x 4 partition, metal lath, plastered both sides.

A new full detail brochure is available to architects. For this data and information regarding the nearest installing distributor, please write to

*U. S. Patent No. 2500050



WELDWOOD® Movable Partitions

a product of

UNITED STATES PLYWOOD CORPORATION

World's Largest Plywood Organization

55 West 44th Street, New York 36, N. Y.

Branches in Principal Cities • Warehouses in Chief Trading Areas
Dealers Everywhere

THE RECORD REPORT

WASHINGTON

(Continued from page 38)

Type of construction — "Most prefer a horizontal type of construction up to a point, but this type of construction cost runs high in a downtown area where land is sold by the sq ft and by the acre."

Remodelling existing buildings — "Placing plants in existing buildings has been done by many stations—but I may I caution you again—if your plants are ten floors up, it takes a lot of elevator activity to keep the plant running; your primary power goes through perhaps ten concrete floors which come high; you may even have to install reinforcements to hold heavy items such as transformer vaults, another problem that must be worked out in the early stages."

Sound considerations — Special treatment is required to isolate outside noises and vibrations just as in radio broadcasting studios; similar acoustic treatment is required for enclosed studios. To be considered: microphone and cameras may be subject to noise pickup if located in an existing building containing machinery capable of creating vibration unless the studio is properly isolated mechanically from the rest of the structure; studio floors must have an extraordinary smoothness if cameras are to be dollyed about without jiggling; air ducts must be specially well treated for quiet flow of air into the studio, whether from air conditioning, heating or air flow sources; ducts and raceways for the various types of circuitry must be provided in liberal quantity for the studio and control room facilities as well as for the film projection rooms or separate equipment rooms.

Space Guide Given

Each type of program source, the report notes, dictates special requirements in terms of building space. Some average space requirements set forth in the report:

Film-Slide-Opaques

Minimum for camera, two 16 mm projectors, multiplexor, utility slide and opaque projectors, benches and storage, monitor etc., 200 sq ft

(Continued on page 251)

FOR BUILT-IN SAFETY THAT WON'T WEAR OUT... **A.W. SUPER-DIAMOND** ROLLED STEEL FLOOR PLATE



GRIPS WITHOUT A SLIP. Engineered design of SUPER-DIAMOND puts 40 traction points in every footstep. All-over pattern gives foot-safety from every angle.

EASY TO CLEAN. SUPER-DIAMOND has no dirt-catching corners. It's easy to clean with hose, mop or broom.



EASY TO MATCH. All-over pattern makes SUPER-DIAMOND easy to match—end to end or side by side. SUPER-DIAMOND can be cut and installed with virtually no waste.

Send for new SUPER-DIAMOND folder S-54. No obligation.



A.W. SUPER-DIAMOND

FLOOR PLATES THAT GRIP

ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

Over 125 Years of Iron and Steel Making Experience

OTHER PRODUCTS: A.W. ALGRIP ABRASIVE Floor Plate • PERMACLAD Stainless Clad Steel Plates • Sheets • Strip • (Alloy and Special Grades)

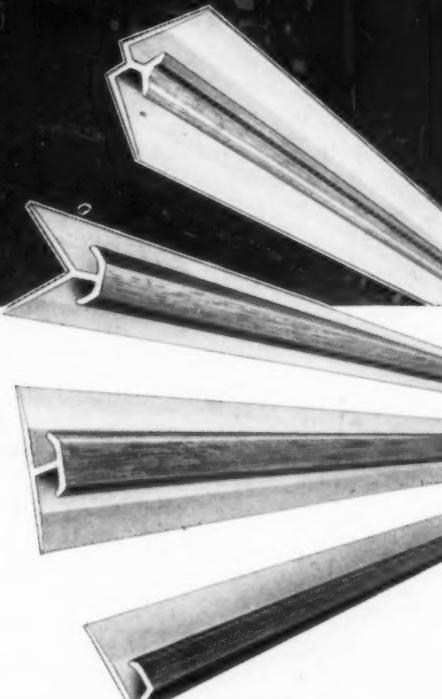


**for beautiful, maintenance-free interiors
use Marlite Woodpanel and Matched Mouldings**

Include appealing Woodpanel interiors with Matched Mouldings in your building and remodeling plans and give your customers beauty, permanence, and low maintenance . . . quickly and economically. Both Marlite Woodpanel and Marsh Matched Aluminum Mouldings, in seven distinctive wood patterns, feature the high-heat-baked finish which is unharmed by alcohol, fruit juices, and boiling water. And Marsh Matched Mouldings give wall and ceiling areas a smooth, unbroken appearance . . . add the perfect finishing touch to every Woodpanel installation.

Plan on Marlite Woodpanel with Matched Mouldings for dens, recreation rooms, libraries, living rooms, offices, corridors, waiting rooms, bars, lounges, and other areas where distinctive, economical interiors are desired. Matched Mouldings are available for all Marlite colors and Marble Panels. See your lumber and building materials dealer or write for full-color Catalog and Woodpanel Folder.

MARSH WALL PRODUCTS, INC., Dept. 1205 Dover, Ohio.
Subsidiary of Masonite Corporation.



THE RECORD REPORTS

WASHINGTON

(Continued from page 250)

Compare the New, Low-Cost HAR-VEY ROLLING DOOR HARDWARE CHALLENGER Series for

Quality

Economy

Performance

These features assure famous HAR-VEY QUALITY

RUSTPROOF ALUMINUM Track

Top-mounted for easy installation — no mortising
Track serves as trim — no painting necessary
V-groove design prevents "chattering"
Low headroom, 1" — 1 1/4"

Durable NYLON rollers

Self-lubricating OILITE bearings
— no maintenance, ever!

Sturdy, ribbed-steel hangers,
cadmium-plated

ADJUSTABLE for quick, easy hanging

3 models meet all needs for doors up to 70 lbs.

- Top-mounted hanger for single pocket or bi-parting doors 3/4" — 1 1/4"
- Side-mounted adjustable hangers for 3/4" and for 1 1/4" by-passing closet doors — all with ALUMINUM extruded track (single and double)!

Look at this typical, low delivered price: Complete packaged set for 2' pocket door, including track, 2 hangers, plastic flush door pull, and all screws, Only \$2.70 List, FOB Destination.

New Convenience in buying and handling!



COMPLETELY PACKAGED sets of hardware and track are available for standard size doors — contain everything you need for a complete installation! FREE plastic flush door pull included!

Just COMPARE this new Challenger Series on every count — and see how it scores first every time!

Available NOW—See your supplier or write Dept. T

METAL PRODUCTS CORPORATION

807 N. W. 20th St., Miami, Fla.

West. Div.: Calmetco, Inc., 609 S. Anderson, Los Angeles, Calif.

Space to permit some expansion and to include room for editing, preview, etc. . . . 300 sq ft

Announce Booth

If a separate announce booth is desired, microphone, telephone and/or intercom, desk, chair and either monitor or visual access to monitor is required 40-50 sq ft

If a camera shot of the announcer is required for such telecasts as news, such may be carried out in a small studio or an especially designed room of about 150 sq ft

Live Studios

An average of almost 200 television studios has given us a figure yielding a room about 45 ft sq or 2150 sq ft

To adequately carry the load of lighting equipment and props, this studio would be at least 14 ft or more in height. The height may also depend to some extent on the type of cooling and heating used. In some climates only a movement of air is required; in others air conditioning is a must.

News Room 125 sq ft

Control Room 200-300 sq ft

Storage 4300 sq ft

Dressing Rooms 300 sq ft

Work Shops

For carpenters, artists and/or painters 250 sq ft

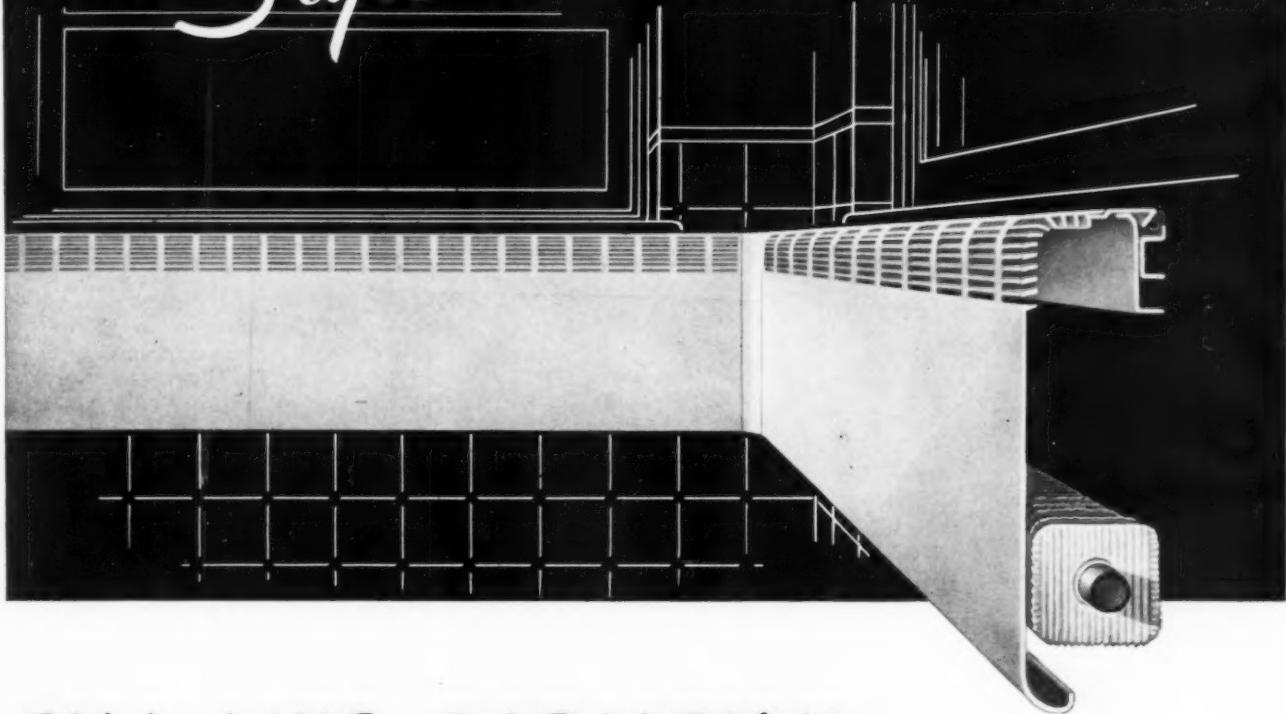
For maintenance of equipment which will also normally be used for storage of tubes and spare equipment and parts 250 sq ft

Remote Pickup Truck

Many stations arrange a drive-in space for the remote pickup truck close to

(Continued on page 258)

NEW *Style* IN PRACTICAL HEATING



SILL-LINE RADIATION

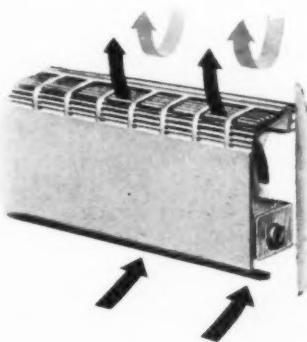
...now combines every comfort of high-capacity heating with the beauty of enclosure styling

For the first time, under-the-window wall-fin radiation is offered in an attractive rigid enclosure expressly designed for use where appearance is important. Flowing lines harmonize with modern surroundings, permit full usability of the space heated.

The new *stylized* Sill-line Radiation retains all the practical advantages of quick, uniform, perimeter heating; economy of operation; ease of installation; and flexibility. But it does more. It blends beauty with utility in full compliance with present architectural trends for hospitals, schools, apartments, office buildings, showrooms.

Go modern with Nesbitt Sill-line. Available in three enclosure sizes in nine modular lengths; two fin sizes for single row or double tierings; wide range of capacities. Investigate today.

Convection air currents enter at the casting bottom, are warmed by the heating element, and leave through the top grille. This activates warmed-air circulation from floor to ceiling and overcomes cold window downdrafts.



The warmed enclosure provides a radiant heating effect to further insure the comfort of occupants in the vicinity of the exposed walls and windows.

MADE BY JOHN J. **NESBITT** INCORPORATED, PHILADELPHIA 36, PENNSYLVANIA

Send for Nesbitt Sill-line Publication 271

B.F. Goodrich

Arraflor

Super-Resistant to:



B. F. Goodrich Arraflor — *Vinyl Plastic Asbestos Tile* — by reason of its special construction, successfully resists many elements and compounds which severely damage ordinary floors.

Arraflor is impervious to a great many substances in addition to those listed here.

If you have a flooring installation which calls for built-in resistance to specific agents, write today for full information. Dept. A12, *B. F. Goodrich Co., Flooring Division, Watertown 72, Mass.*

You can depend on **B.F.Goodrich FLOORING PRODUCTS**

RUBBER TILE • ASPHALT TILE • VINYL PLASTIC TILE • RUBBER COVE BASE • ACCESSORIES

THE RECORD REPORTS

WASHINGTON

(Continued from page 254)

the studios to provide an auxiliary control for the studio. 200 sq ft

Laboratories

Number will depend on total employment and arrangement of building; lavatory facilities close to transmitter must meet FCC requirements. 125 sq ft

Copies of the manual can be obtained for \$1.50 each by radio and television members of the Association and by subscribers to its Television Department Services. The National Association of Radio and Television Broadcasters is located at 1711 N Street N.W., Washington 6, D. C.

POST-ATTACK PLANNING NOW IS URGED BY DPA

Plans and specifications for new plants to replace bombed-out factories should be prepared now and continually kept up to date for emergency use, the Defense Production Administration says.

Industries vital to defense are urged to be prepared for the quickest possible resumption of production if enemy attack should occur, and DPA's post-attack planning staff, headed by William Hoff, is ready to assist in such activities.

Preliminary consideration of such problems of reconstruction as local building codes, with a view to a plan for suspending some of their sections in case of emergency, is suggested by DPA. Planning now for equipment and its installation is also advised.

Dispersion of new facilities, with incentives provided by Government, is part of the program. Because dispersion is not always feasible, DPA is considering a plan whereby the additional cost of protective construction to guard facilities in known target areas would be permitted the fast amortization treatment. This scheme could apply to new protection for existing plants as well as protective measures for new ones.

(Continued on page 262)

another **HOMASOTE FIRST**
—designed to reduce the cost of building

We
can't
stop
Niagara,
but...



most water problems
are duck soup...



with
**NOVAPROOFING
METHODS**

Let us send you fully descriptive literature on the five Novaproofing products and the long-tested methods whereby almost any water condition can be corrected. For every important requirement in masonry or stucco—*wherever you want to keep water in or out*—there is a product and a method which can mean increased protection from the weather, increased strength, increased service life.

As a service to Architects—never before available—we offer a series of nine Specification Data Sheets covering all important masonry uses. To Builders—a series of 19 Service Bulletins, the know-how of Novaproofing.

**NOVA SALES
Co.**
TRENTON 3, N. J.

A wholly owned subsidiary of Homasote Company—manufacturers of the oldest and strongest insulating-building board: wood-textured and striated panels.



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Trenton 3, N. J.

Send details on NOVAPROOFING

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Address.....

City..... State.....

My lumber dealer is.....

another **HOMASOTE FIRST**
—designed to reduce the cost of building



**Roof Sheathing
plus Insulation
for ASPHALT, ASBESTOS
or WOOD SHINGLES**

In many thousands of homes, Homasote is now serving as underflooring, exterior wall sheathing and *roof sheathing*. In every such application, Homasote provides both structural strength and top insulating value—as well as an efficient, fast, economical, easy-to-use sheathing material.

With asphalt and asbestos shingles—furring strips, 12" on centers, are applied to the rafters. The pre-expanded Homasote is then nailed to the furring strip. The shingles are applied to the Homasote in the usual manner, using $\frac{3}{4}$ " Viking Staples.

With wood shingles—the pre-expanded Homasote is applied

Let us send you fully illustrated and detailed literature

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Trenton 3, N. J.
Send details on HOMASOTE.

Name.....

Address.....

City..... State.....

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**HOMASOTE
COMPANY**
TRENTON 3, N. J.

Makers of the oldest
and strongest
insulating-
building board
on the market.



THE RECORD REPORTS

WASHINGTON

(Continued from page 258)

MORE AIR FIELDS NEEDED: FEDERAL SURVEY ON AID

Congress may be asked to authorize as much as \$157 million extra funds for Federal aid to airport programs if a study now under way in the Department

of Commerce bears out a recent survey by the Civil Aeronautics Administration.

The CAA found airport construction or development "justified" for civil or national defense purposes that would require that amount of Federal funds. Of the "matching" money, \$75 million already has been raised; the balance appeared to be readily obtainable if necessary Federal funds were voted.

Secretary of Commerce Charles Sawyer said CAA would probably ask for and use the added funds to speed up

construction of airports now under way, make improvements to existing facilities and construct some new airports.

Mr. Sawyer noted the need for special attention to airport design in a jet age: "Should jet transports come into common use in this country, we will be faced with a brand new set of problems, not only in runways and terminal facilities but in weather and communication problems connected with 500-mile-an-hour flight."

MILITARY BUILDING STUDY: ADVANCE PLANNING NEEDED

Advance planning headed the list of "areas of weakness" compiled by the House of Representatives Appropriations subcommittee on military public works in its report on a tour of construction projects at 73 installations in 21 states.

Other weaknesses in the military construction program as listed in the report:

1. Failures in standardization of repetitive-type structures.
2. Lapses in attention to austerity standards.
3. Too much use of the negotiated and cost-plus-fixed-fee types of contracts for new construction.
4. Lack of control in the conduct of cost-plus-fixed-fee contracts.
5. Too frequent use of the change order and negotiated supplemental agreements.
6. Uneconomic and violent peaking of obligations in the last month of the fiscal year for both year-end and no-year funds.

Recognizing that emergency times do not always permit completion of an orderly construction cycle, the subcommittee said the prime objective in military construction programs then should be "to minimize the difficulties inherent in speedy construction by the maximum development of advance planning."

TREND TO LARGER HOUSES NOTED BY HHFA AND FHA

An increase in the size of houses financed with FHA-insured mortgages during 1951, as revealed in the 1951 report of the Housing and Home Finance Agency, has been hailed by Federal Housing Administration Commissioner Walter L. Greene as being indicative of a new trend toward larger houses.

(Continued on page 265)



1. Your RCA Sound Distributor

For expert, "no obligation," planning assistance, you'll find your RCA Sound Distributor is the man to know.

He can offer you advice on the latest in equipment, the newest in sound techniques. His experience covers a wide range of applications including schools, plants, hospitals, hotels, institutions, and stores.

Call on him for the answer to any question involving sound.

2. New RCA Sound Products Catalog

Here, in easy-to-find form is the full line of RCA Sound Products.

In 17 pages, you'll find helpful data on RCA sound equipment from microphones to large sound system centers. Get this booklet for your files. It's a handy reference for any sound job you may tackle.

MAIL COUPON for your copy of the RCA Sound Products catalog now.



Sound Products, Dept. 13L, Building 15-7
Radio Corporation of America, Camden, N. J.

- Please have an RCA Distributor Sound Specialist call on me.
 Send me the new free RCA Sound Products catalog.

Name _____ Title _____

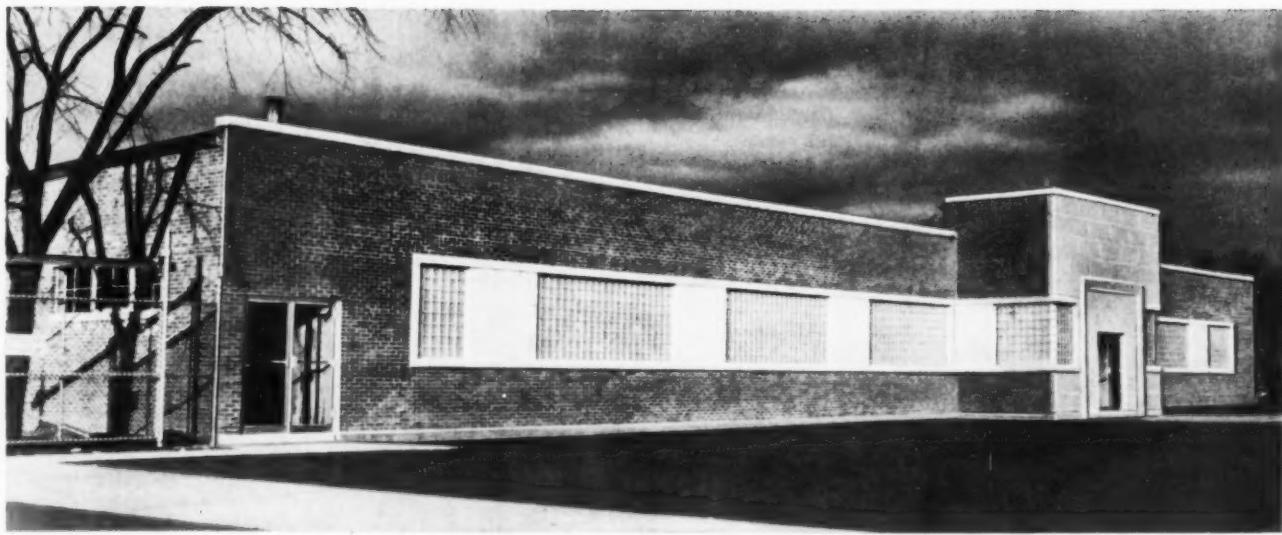
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Address _____

City _____ Zone _____ State _____



RADIO CORPORATION of AMERICA
SOUND PRODUCTS



Planned **TODAY** for electrical availability **TOMORROW**

The Marlin-Rockwell Corporation's new building is equipped with G-E Fiberduct which permits future electrical changes. G-E Fiberduct gives the advantage of raceway coverage for today's electrical needs *plus* the provision to meet tomorrow's unforeseen demands for changing floor layouts or expanding electrical services. In fact, Fiberduct underfloor raceways permit complete freedom in arranging desks, benches, or machines. They make service outlets available throughout the floor area—anywhere along the duct line.

At any time during the life of the building, new outlets for power, signal, or telephone facilities can be added quickly—merely by making a small opening in the floor over the raceway, pulling the wires through, and installing the outlet. If more electrical capacity is needed, additional wire can easily be pulled through the raceways. These changes in electric service can be made quickly without disturbing the building's tenants or operations.

Plan on G-E Fiberduct, the non-corrosive underfloor raceway, for electrical availability in your buildings. Write for more information or a free copy of the G-E Fiberduct Manual to Section C-125, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Marlin-Rockwell Corporation Building, Plainville, Conn., contains 17,000 feet of G-E Fiberduct to provide raceway coverage for present needs and for future electrical changes.

Architect and Engineer: Marlin-Rockwell Corp.

Electrical Contractor: Joseph McNellis & Son, Waterbury, Conn.

General Contractor: Frank E. Downes Construction Company, New Britain, Conn.



New electric service outlets can be added quickly, conveniently, without disturbing operations.



FIBERDUCT
Raceways
for electrical availability

You can put your confidence in—
GENERAL ELECTRIC

THE RECORD REPORTS

WASHINGTON

(Continued from page 262)

The typical house securing an FHA mortgage during 1951 contained 5.2 rooms with a floor area of 879 sq ft, exclusive of basement, attic or garage. In 1950 the typical unit had 4.9 rooms with 838 sq ft of floor area. 1951 was

the first year since World War II in which the typical new dwelling securing an FHA-insured mortgage was reported as larger than in the preceding year.

The typical new single-family dwelling securing an FHA mortgage in 1951 was appraised at \$9007, including house, all other physical improvements and the market price of an equivalent site which averaged \$1092, with street improvements or utilities, rough grading, terracing and retaining walls, if any. The equivalent 1950 figure was \$721 less.

Special provisions of the FHA mort-

gage insurance program designed to encourage larger structures is expected to further the trend. The National Housing Act provides that the \$7000 maximum valuation base for 95 per cent insured loans may be increased by \$1000 successively by the addition of a third and fourth bedroom to the plans. Where loans are by operative builders, the \$7000 valuation base for the 85 per cent mortgage insurance allowed increases similarly with the addition of the third and fourth bedroom.

This special provision for high ratio loans was suspended while Regulation X was in force, is now operative again. FHA, Commissioner Greene said, stands ready to extend full advantage of the law to spur architects to design and builders to construct larger dwelling units.

Put America's most beautiful flooring in that new apartment house...



AMERICAN BILTRITE

RUBBER COMPANY

TRENTON 2, NEW JERSEY

Also makers of Biltrite NURON for Shoe Soles, Luggage and Accessories—and Biltrite Rubber Heels

AFFILIATES...BILTRITE RUBBER COMPANY, CHELSEA 50, MASS. • AMERICAN TILE & RUBBER CO., TRENTON 2, N. J. • PANTHER-PANCO RUBBER CO., CHELSEA, MASS. • AMERICAN TILE & RUBBER CO. (CANADA) LTD., SHERBROOKE, QUEBEC • PANTHER RUBBER CO., LTD., SHERBROOKE, QUEBEC, CANADA

Amtico

RUBBER FLOORING



SAMPLES ON REQUEST

AMTICO, Dept. AR12, Trenton 2, New Jersey

Gentlemen:

Please send me free box of 4" x 4" samples of Amtico Flooring in standard $\frac{1}{8}$ " gauge and all 26 stock colors—also illustrated literature.

NAME.....

FIRM.....

ADDRESS.....

CITY..... STATE.....

HOME BUILDERS ORGANIZE NEW RESEARCH INSTITUTE

A closer working relationship between the architect and the home builder is one of several objectives listed for the new Home Builders' Research Institute announced recently by the National Association of Home Builders.

The Institute will try to "coordinate the scattered housing research now under way and to conduct practical field tests on new materials and techniques developed in university and industrial laboratories."

The Institute will attempt to serve as a liaison group between building materials manufacturers and the builders using their products. New ideas tried and proven in laboratories will be given field tests in experimental houses throughout the country.

Leonard G. Haeger, N.A.H.B. technical services director, is guiding the Institute's activities through a nine-man Board of Trustees selected from among the nation's home builders.

ON THE CALENDAR

Dec. 1-6: 20th National Exposition of Power and Mechanical Engineering—Grand Central Palace, New York City.

Dec. 2-3: Preliminary meeting for 1953 BRAB correlation conference on school construction costs, co-sponsored by the American Institute of Architects, the U.S. Office of Education and the U.S. Chamber of Commerce—Washington, D. C.

(Continued on page 270)



Parcel Post Terminal, Dallas, Texas. Architect, John Edward Smith

CONSISTENT WITH THE SIMPLICITY OF THE MONUMENTAL BUILDING

*Tuf-flex** Tempered Plate Glass Doors complement a dignified exterior as they reveal the interior. The variety of types available offers a latitude of choice to the architect.

For any building—monument, mansion or market—*Tuf-flex* Doors invite the public because they give one a clear view of the interior.

Mail the coupon for your free copy of our *Tuf-flex* Door booklet.

TUF-FLEX DOOR FACTS:

Thickness: $\frac{3}{4}$ ".

Strength: three to five times that of regular plate glass.

Sizes: widths to 48", heights to 108".

Fittings: bronze or alumilited aluminum.

®



TUF-FLEX TEMPERED PLATE GLASS DOORS

MADE ONLY BY LIBBEY·OWENS·FORD GLASS COMPANY
75122 Nicholas Building, Toledo 3, Ohio

Libbey·Owens·Ford Glass Company
75122 Nicholas Building, Toledo 3, Ohio

Please send me a copy of your booklet showing uses of
Tuf-flex Doors, as well as your installation detail folder.

Name _____

Address _____

Company _____

THE RECORD REPORTS

(Continued from page 266)

Dec. 5-Jan. 25: American Drawings, Watercolors and Prints 1952; national competitive exhibition — Metropolitan Museum of Art, Fifth Avenue at 82nd Street, New York City.

Dec. 17-Feb. 15: De Stijl, a large exhibition of painting, sculpture, architectural models and designs and furnishings

executed by followers of the De Stijl movement, which originated in Holland in 1917 and still exerts much influence — Museum of Modern Art, 11 W. 53rd Street, New York City.

Jan. 8 throughout the year: Good Design 1953, sponsored by New York's Museum of Modern Art and the Merchandise Mart; a selection of home furnishings that have come on the market since July 1952 — The Merchandise Mart, Chicago.

Jan. 13-15: Annual Meeting, National Constructors Association — Hotel

Commodore, New York City.

Jan. 18-22: 1953 convention and exposition, National Association of Home Builders — Conrad Hilton Hotel, Chicago.

Jan. 19-22: Plant Maintenance Show and Conference — Public Auditorium, Cleveland.

Jan. 21-Mar. 15: Built in U.S.A.; a survey of American architecture, both industrial and residential, since the Museum's 1944 exhibit; 43 buildings selected for "quality and contemporary significance," shown in models, color slides and photographs — Museum of Modern Art, 11 W. 53rd Street, New York City.

Jan. 26-29: 59th Annual Meeting, American Society of Heating and Ventilating Engineers — Conrad Hilton Hotel, Chicago.

Jan. 26-30: 11th International Heating and Ventilating Exposition — International Amphitheater, Chicago.

Jan. 28-31: Annual Meeting, Society of Architectural Historians — Cleveland.

Feb. 12-14: Annual Meeting, Church Architectural Guild of America — Hotel Statler, Washington, D. C.

Feb. 14-19: National Convention and Architectural Exhibit of School Buildings, American Association of School Administrators — Atlantic City.

Feb. 18-20: Eighth Annual Society of the Plastics Industry Reinforced Plastics Division Conference — The Shoreham Hotel, Washington, D. C.

Feb. 21-Mar. 1: 1953 Exposition, Home Show of St. Louis Inc. — Kiel Auditorium, St. Louis.

Mar. 16-20: Chicago Conference, National Association of Corrosion Engineers.

Mar. 23-Apr. 4: York course on protection and repair of ancient buildings. Details from Secretary, York Civic Trust, St. Anthony's Hall, Peasholme Green, York, England.



Schoolmaster: that's *Terrazzo*

There's economics in its long life, simple arithmetic in its low maintenance cost, art in its versatility, hygiene in its easily cleaned surface. TERRAZZO stands the test of history, greeting each new school class with ageless vitality.

Specify TERRAZZO—for floors, wainscots, walls and stairways—and do your client and your school a permanent service.



Write for free
AIA Kit, the
complete refer-
ence work about
TERRAZZO



THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

404 SHERATON BUILDING 711 14th St., N. W. WASHINGTON 5, D. C.

OFFICE NOTES

Offices Opened

• Earl C. Hayes Jr. has announced the opening of offices for the practice of architecture at 718 Sixth Street, Portsmouth, Ohio.

• J. Bertram King has opened offices for the practice of architecture at 265 Charlotte Street, Asheville, N. C.

(Continued on page 274)



Lever Brothers Company wanted its building to symbolize cleanliness and comfort. So they built it of stainless steel and glass, and installed a Carrier Conduit Weathermaster System.

Only this unique, advanced method of air conditioning in Lever House could make all these things possible . . .

1. Comfort is controlled—Temperature and humidity are under control in both summer and winter. And building occupants don't have that "clammy" feeling during the intermediate seasons.

2. The walls are windows—Because air conditioning can handle the sun's heat, it was possible to build walls of glass . . . to give employees extra light and more view.

3. The building is sealed—The Carrier Conduit Weathermaster System takes in outside air at one central source, conditions it and distributes it through small conduits.

4. 30% was saved on window costs—Because the building is sealed, the expense of movable windows was eliminated.

5. Office spaces are quiet—All motors, fans, filters and other mechanical equipment are at a central station.

6. Maintenance is centralized—with mechanical equipment centralized, all maintenance is done conveniently at one place.

Modern architecture plus modern air conditioning have made Lever House a building of beauty, less expensive to build, more comfortable to work in. Carrier Corporation, Syracuse, New York—for 50 years . . . the people who know air conditioning best.

Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING

At the new Hotel Statler Los Angeles, Calif.



Electrical Contractor—Stetson Electric Co., Los Angeles.
Architects—Holabird & Root & Burgee, Chicago, Ill.
Associate Architect—William B. Tabler, New York City
General Contractor—Robert E. McKee, Inc., Los Angeles

NEW CONVENIENCE—guests at Los Angeles' new Hotel Statler get last-word service and convenience from check-in to check-out time. And contributing to this guest-is-king policy is the hotel's equipment—for example, the wiring devices.

THE ANSWER IS BRYANT—for convenience and long maintenance-free service. Bryant wiring devices add the touch of quality and dependability that any modern hotel insists on. Every Bryant device is thoroughly tested and inspected before shipping.

BRYANT MERCURY SWITCHES—4701-I, for absolutely quiet operation in rooms and corridors—the Bryant 4832 convenience outlet—rugged, dependable—each device one of the Bryant line for home, office and industry. Specify Bryant on your next job.

The Bryant Electric Company

Bridgeport 2, Connecticut

Chicago • Los Angeles

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4832 Convenience Outlet

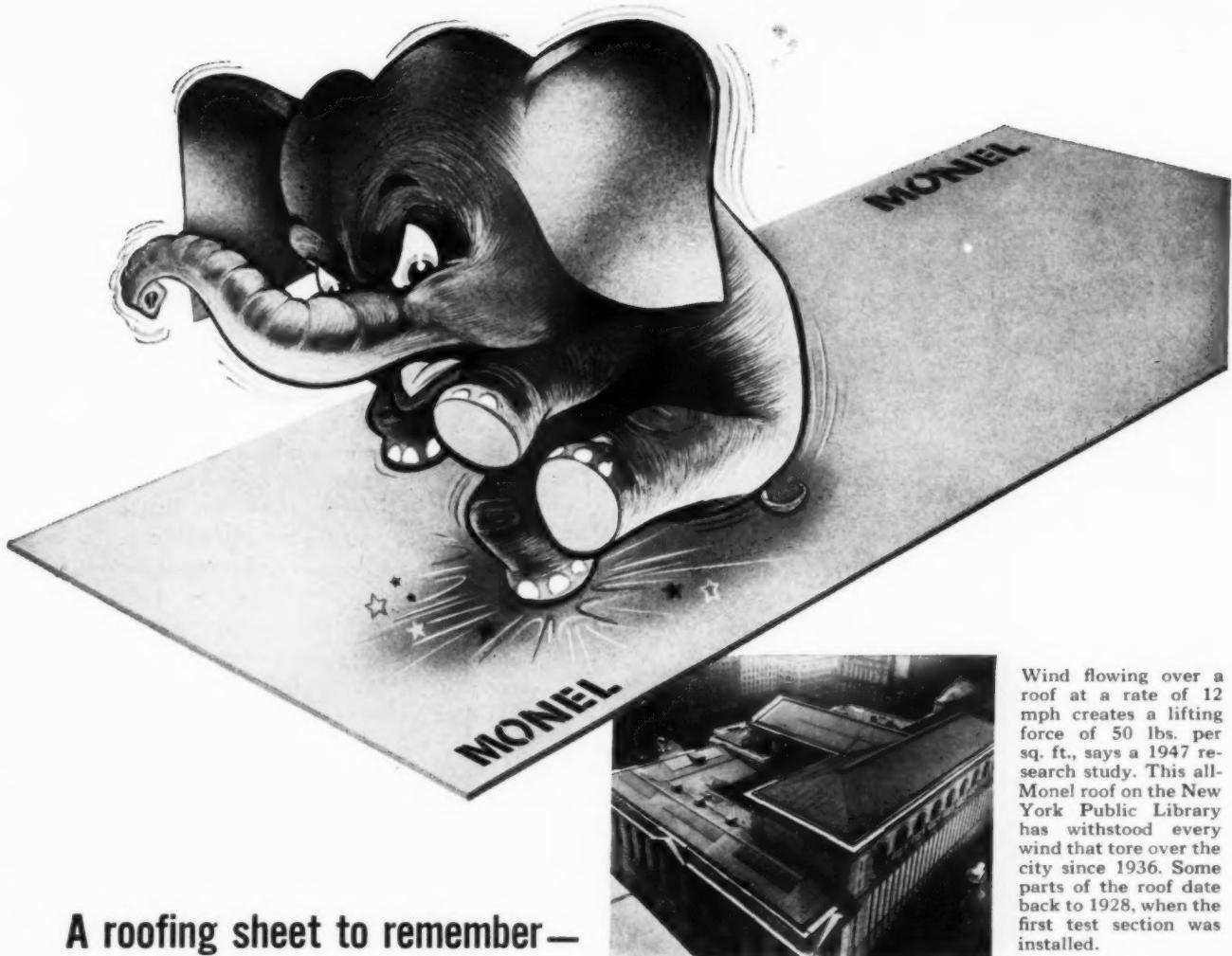
*Specify Bryant
from your Electrical
Distributor*



4701-I Mercury Switch



4832 Convenience Outlet



A roofing sheet to remember—

... it's rigid
... it's strong
and tough!

When a Monel® roof goes up, it doesn't matter much what comes down on it.

For Monel is just about as rugged as a roofing metal can be.

Two-thirds nickel and one-third copper, Monel provides greater rigidity than other commonly-used materials.

What's more, it is stronger and tougher than structural steel. (And non-rusting, besides!) It withstands damage and deformation during installation...and impact, abrasion and flexure after installation.

Right now—because the defense program calls for so much nickel—Government orders prohibit the use of Monel for building applications.

But the time will come again when there is enough Monel available to meet normal roofing needs! Meanwhile, INCO can help you in planning for the future. Call on our Architectural Section for the latest technical information and literature. There's no obligation, of course.

MONEL

... "for the life of the building"



THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N.Y.

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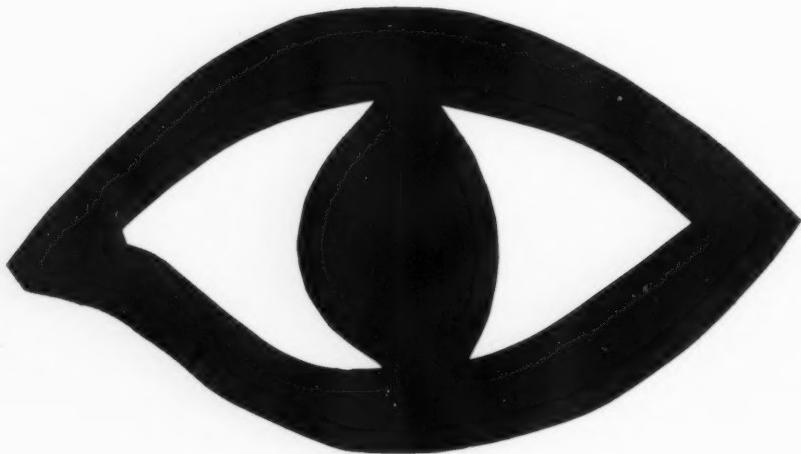
(Continued from page 270)

• Charles Gordon Lee, Architect, has reopened offices for the practice of architecture after a tour of extended active duty with the United States Air Force. Offices are at 515 Mercantile Building, Denver 2, Colo.

• Don Muntz, Architect, has announced the establishment of his offices for the



Before recognition, before thinking,
before memory, is the eye itself—
with its own needs, preferences,
limitations . . . We value these first
in the design of a lighting instrument



CENTURY LIGHTING, INC., 521 WEST 43RD STREET, NEW YORK 36
626 NORTH ROBERTSON BOULEVARD, LOS ANGELES 46

For his firm's Veterans Hospital at Fort Wayne, Ind., Louis Rossetti of Giffels & Vallet, Inc., L. Rossetti, Associated Engineers and Architects, has received the Medal of Honor of the Detroit Chapter of the American Institute of Architects. The chapter joined the Board of Directors of the Michigan Society of Architects to present the award at a dinner meeting. A. M. Strauss of Fort Wayne was associate architect on the hospital

practice of architecture in partnership with Caldwell & Mason, Engineers, under the firm name of Caldwell, Mason & Muntz, Architects & Engineers, 4014 Firestone Boulevard, South Gate, Calif.

• Evan M. Terry announces the opening of his offices for the practice of architecture at 646 Brown-Marx Building, Birmingham, Ala.

New Firms, Firm Changes

• Rubens F. Clas, A.I.A., president of Clas-Reddeman, Inc., announces that the present firm has been dissolved and will revert to its previous corporate name, Rubens F. Clas, Inc. Gerald O. Ziebell will continue as superintendent. Offices are at 524 East Mason Street, Milwaukee 2, Wis.

• The firm of DeWitt and Swank, Architects, composed of Roscoe DeWitt, A. B. Swank Jr. and Fred L. Hardison, has announced that Mr. DeWitt and Mr. Hardison will now practice under the firm name of Roscoe DeWitt, and Mr. Swank will practice under the name of A. B. Swank and Associates. Both firms will continue their offices at 2025 Cedar Springs Avenue, Dallas, Tex.

• Daniel Paul Higgins and Otto R. Eggers, partners in the architectural

(Continued on page 278)

PROSPECTS SEEK OAK FLOORING IN LOW-COST HOMES



New and more economical building methods are enabling architects to specify oak flooring for the low-cost homes they design. This is important because real estate agents selling low-cost homes report that prospects look for and want oak flooring and its benefits in their new homes.



By specifying that oak flooring should be laid over concrete slabs* using screeds set in mastic, architects are making it possible for low-cost home owners to have all of oak's basic benefits:—economy, durability and "healthfulness."



An important reason that 85% of all prospective homeowners want oak flooring in their next homes is the realization that oak is the easiest floor to care for. A few strokes with a dust mop is all that is needed to keep an oak floor glistening.



*85% of all Prospective Homeowners
want oak in their next home*

* SEND TO NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION, STERICK BLDG., MEMPHIS 3, TENNESSEE,
FOR FREE, FHA-APPROVED INSTRUCTIONS FOR LAYING OAK OVER CONCRETE

THE RECORD REPORTS

(Continued from page 274)



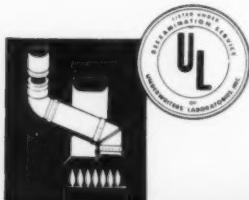
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firm of Eggers & Higgins of New York, have announced the admission of five new members of the firm: David L. Eggers, Richard F. Eggers and Daniel P. Higgins Jr., sons of the partners; and Richard M. Pott and R. Jackson Smith.

- Hugh H. Creighton has joined the firm of Kelly & Gruzen, Architects and Engineers, as a project manager in the hospital division. Kelly & Gruzen have offices at 80 Fifth Avenue, New York City.

- William R. O'Connell and Victor G. Probst announce the formation of a partnership for the practice of architecture and hospital consultation under the firm name of O'Connell & Probst, with offices at 305 Perry-Brooks Building, Austin, Tex.

New Addresses

The following new addresses have been announced:

Milton Katzman, A.I.A., 160 East 56th Street, New York City.

Lloyd E. Mellor, Architect, 516 Fifth Avenue, New York City.

Carl Louis Maston, Architect, 8717 West Third Street, Los Angeles 48, Calif.

Palmer and Baker, Inc., Consulting Engineers, Architects, Naval Architects and Marine Engineers (home office), Carpenters Building, 957 Springhill Avenue, Mobile, Ala.

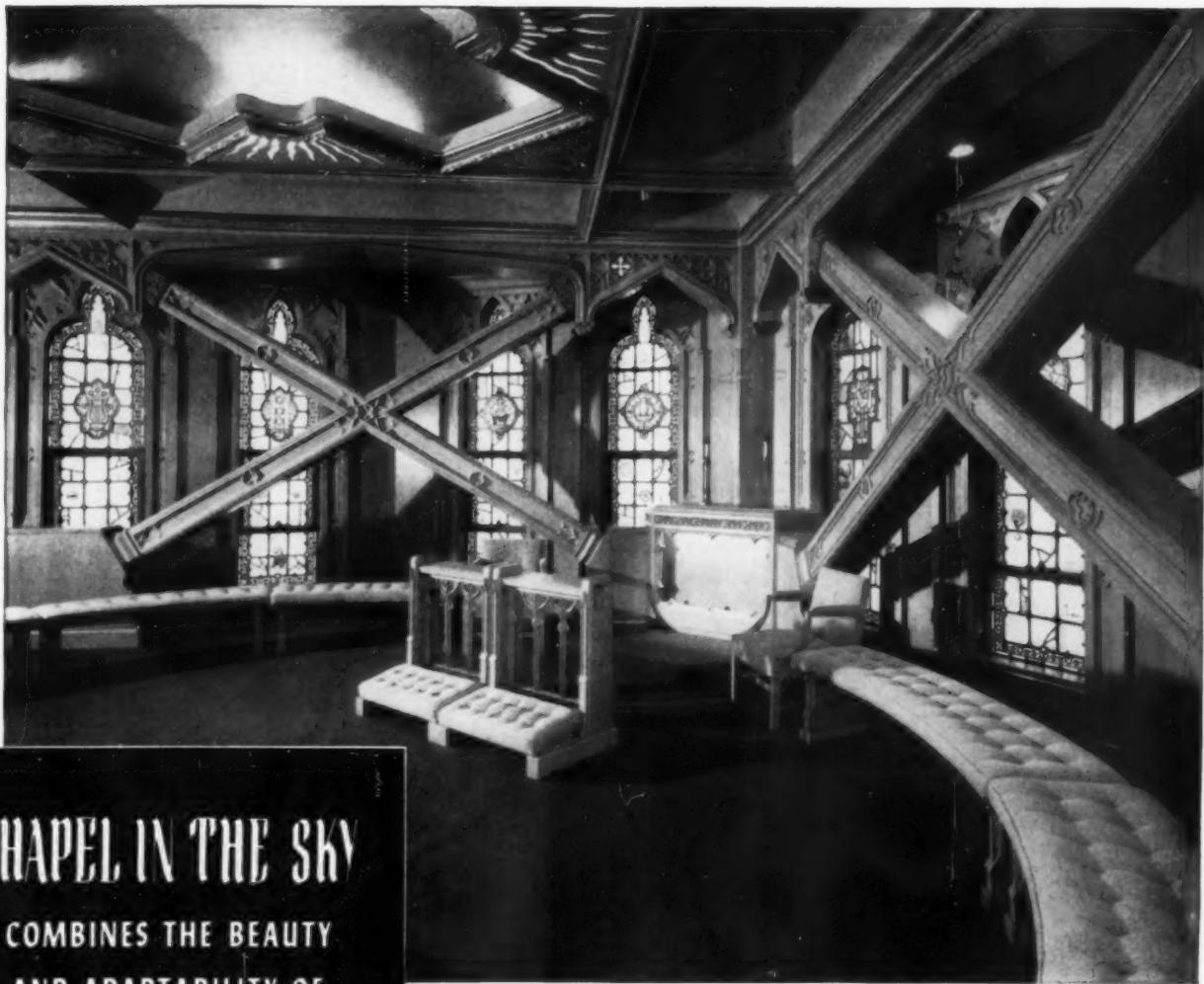
ELECTIONS APPOINTMENTS

- Elliott C. Spratt, secretary of the Hillyard Chemical Co. of St. Joseph, Mo., has been elected president of the Producers' Council. He succeeds A. Naughton Lane of the Monarch Metal Weatherstrip Corp.

Other newly-elected officers include R. S. Hammond, Johns-Mansville Sales Corp., New York, first vice president; William Gillett, Detroit Steel Products Co., Detroit, second vice president; F. J. Close, Aluminum Co. of America, Pittsburgh, treasurer; and Fred M. Hauserman, E. F. Hauserman Co., Cleveland, secretary.

- Joseph D. Lohman, Chicago professor and city planner, has been named by

(Continued on page 282)



CHAPEL IN THE SKY
COMBINES THE BEAUTY
AND ADAPTABILITY OF
FINE INTERIOR WOODWORK

Altar View, Chapel-in-the-Sky, Methodist Temple Tower, Chicago.

DR. CHARLES RAY GOFF, Pastor. FRANK J. McCORMICK, Designer, Park Ridge, Illinois.

*Built, Finished and Installed
By One Group of Craftsmen*

Celestial in its beauty, its atmosphere and its locale, Chicago's "Chapel-in-the-Sky" nestles in the tower of the famed Methodist Temple, 400 feet above the blare of Clark Street. No other chapel in the world is situated so high above the ground, and few provide so inspiring a setting for a wedding, a baptism, or an hour of prayer. The chapel's graceful late Gothic design brilliantly utilizes both the beauty and adaptability of wood. A striking example is the Cross of St. Andrew effect achieved by placing wood panels over the steel beams

which support the tower against Chicago's extreme wind stresses. The wood throughout the chapel, including the altar, the paneling, Prie-Dieux and unique curved benches, is selected White Oak with a Mediterranean drift wood finish.

All architectural woodwork and cabinetwork for the Chapel-in-the-Sky was built and finished in Woodwork Corporation's spacious shops precisely to the designer's specifications. Final assembly in the chapel was handled by Woodwork Corporation's installation specialists. This complete Woodwork construction-finish-installation service eliminates delays and errors and assures satisfaction with economy. However large or small your custom woodwork plans, this organization of craftsmen will serve you well.

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THE RECORD REPORTS

(Continued from page 278)

President Truman to head the National Capital Planning Commission. Prof. Lohman has served as a consultant on community problems to the Atomic Energy Commission and the Tennessee Valley Authority and has been a lecturer at the University of Chicago.

• Joseph Passonneau, A.I.A., formerly a member of the design staff of Skidmore, Owings & Merrill, has recently been appointed chief of architectural design for the Tennessee Valley Authority.

• Walter L. Huber, San Francisco, is the new president of the American Society of Civil Engineers. He succeeds Col. Carlton S. Proctor of New York. Mr. Huber is a former vice president and director of the society and a former president of its San Francisco section.

(Continued on page 286)

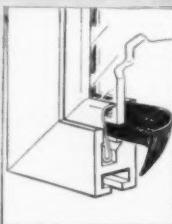
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FIELD TRIP: MEXICO AND WRIGHT

Priro-Mexico



Highlight of a highlight: on a "field trip" to the Eighth Pan American Congress of Architects in Mexico City, fifth-year architectural students of the University of Texas met Frank Lloyd Wright at a party given for them by American Ambassador William O'Dwyer. All 22 members of the fifth-year class made the trip, financed half by the students themselves and half by gifts from the Central Texas Chapter of the American Institute of Architects and the American Architectural Foundation

How to determine unit cost of house construction

—a simplified method applying to all designs and local price variations

THIS book takes up all phases of building a house—earthwork, masonry, carpentry, plastering, plumbing, etc. Tells how to determine costs for every operation; includes data on quantity of material and number of labor hours needed; gives worked-out examples of typical unit costs. As helpful background, it includes structural details and methods of operation for many aspects of home construction. Compares all methods of estimating; gives pointers on the cost summary sheet; shows how to figure exact costs of building a house in any price range, location, or size. Gives full coverage to heating with forced air, one-pipe steam, and one-pipe forced hot water.

Just Published!

HOUSE CONSTRUCTION COSTS

By G. UNDERWOOD

302 pages, 6 x 9, 63 illus., \$5.50

BASED on the author's 39 years of house-building experience, this simplified technique for obtaining unit costs is supplemented by data and general background information on the technical operations, with emphasis on cost factors. The book contains an original table showing the proportions of labor to material costs, and a model of a simple estimate sheet. Given you a quick, accurate method for estimating the exact unit costs of building a house in any price range, location, or size.

Another valuable building book
The Business of Home Building
A Manual for Contractors
Tells how to make a profit with minimum risk; how to minimize business errors and increase your chances of success. Gives tips on estimating operating costs, accounting, selling, and financing. Points out legal pitfalls. Discusses purchase and development of land, figuring a budget, etc., etc. By B. K. JOHNSTONE and C. E. JOERN. 289 pages, 6 x 9, \$4.50.

Tells how to estimate unit costs of:
• excavating
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• lighting, painting, and papering
• front stone veneer, etc.

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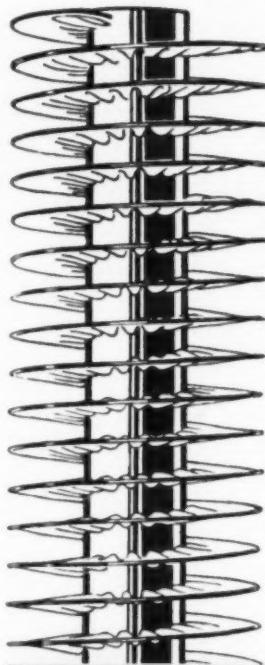
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Literature is available to assist you in your contact with clients. For this, or technical data, or for a complete list of M.I.A. members, write the Managing Director:



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Hinged side doors in home garages are always in the way.

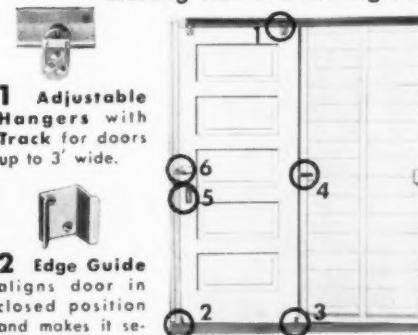
Now, Sterling offers an easy solution to this problem. The new Sterling No. 890 Sliding Door Set is designed especially for sliding side doors in home garages. Here is a side door that is never in the way as it slides along the wall. The door can be made as wide as desired so lawn mowers and large equipment can be taken in and out of the garage easily!

Here is The Package!

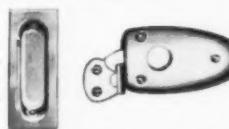
Sterling No. 890 Sliding Door Set



3 Floor Guide
eliminates need
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ing of door.



4 Back Stop
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tects fingers and
key.



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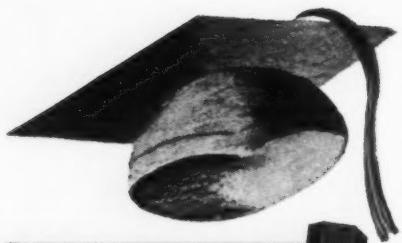
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THE RECORD REPORTS

(Continued from page 282)

• The National Research Council has appointed four new members to the *Building Research Advisory Board* for 1952-53. They include Miles Colean, consulting economist, Washington, D.C.; J. R. Meehan, vice president of Fischbach, Moore & Morrissey, Inc., Chicago; C. H. Topping, principal architectural and civil engineer, E. I. duPont de Nemours & Co., Inc., Wilmington, Del.; and Alfred T. Waidelich, vice president of the Austin Co., Cleveland.

• William G. Carr has been appointed executive secretary of the *National Education Association*, succeeding Willard E. Givens, who retired after 18 years of service. Dr. Carr has been a member of the N.E.A. headquarters staff since 1929, first as assistant director of research, then as director of the research division. In 1940 he was appointed associate secretary. Since 1936, he has also served as secretary of the Educational Policies Commission.

SEEK HARDWOOD DESIGNS IN NEW COMPETITION

Five awards for designs employing hardwoods will be presented in a competition sponsored by the Hardwoods Exhibit Committee.

One of the awards will be made for architectural interiors, including stores, shop windows and other business or home interiors. Two other awards will go to furniture and home furnishings designs and another prize will be awarded for miscellaneous items not covered by the other categories.

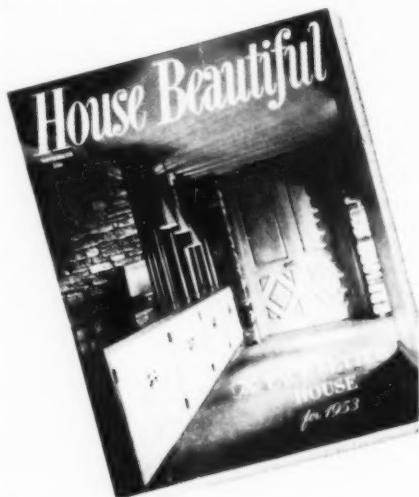
The contest is to be held annually in conjunction with a new permanent hardwoods exhibit scheduled to open early in 1953 at the Museum of Science and Industry in Chicago. Winning designs will be displayed prominently.

Closing date for receipt of entries for the first competition is December 15. It is necessary only to submit one or more black-and-white photographs of a product or interior for consideration. Renderings are not required. All entries must have been actually produced and sketches for proposed products are not acceptable. Handicraft items sold commercially will be eligible.

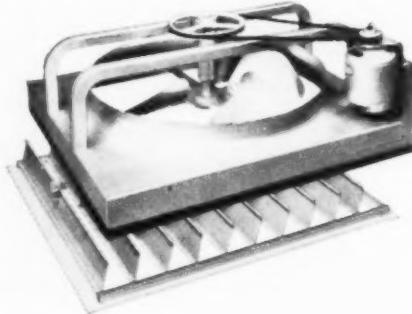
Entries should be sent to the Hardwood Exhibits Committee, Room 1215, 600 So. Michigan Ave., Chicago 6, Ill.

(Continued on page 288)

House Beautiful's Pace Setter House for 1953



is cooled with Hunter Package Attic Fans

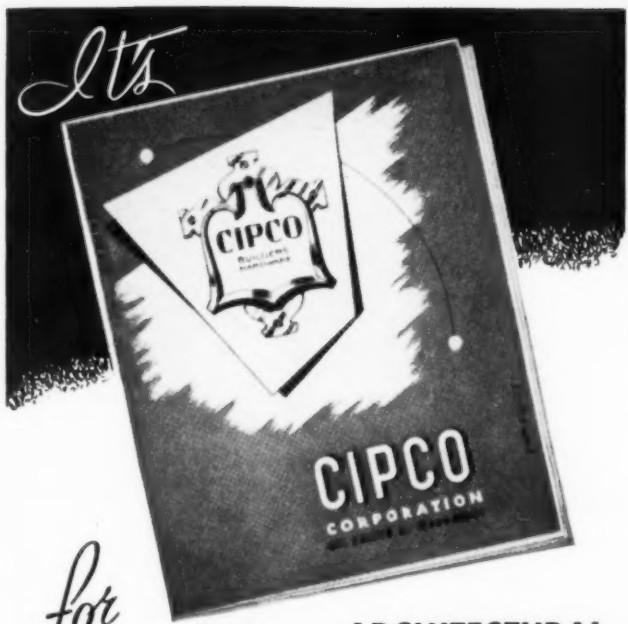


■ When clients want cool comfort at low cost, tell them about the Hunter Package Attic Fan . . . one of the many modern features in House Beautiful's 1953 Pace Setter House. This compact, easily installed unit cools every room in the house. Sizes from 4700 CFM to 16000 CFM. Write for 32-page booklet, "How to Cool for Comfort." See our catalog in Sweet's.



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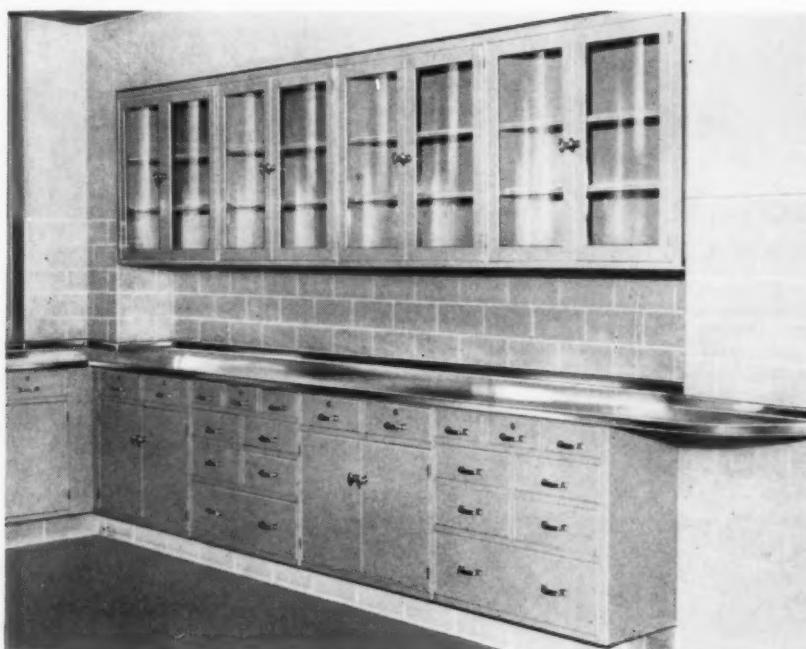
(Continued from page 286)

PARKER PEN DEDICATES NEW WISCONSIN PLANT

Arrow Park, a three-and-a-half-million-dollar manufacturing facility at Janesville, Wis., has been dedicated by the Parker Pen Company. When it is completed next month, the new plant will add 212,500 sq ft of floor space to Parker's present Janesville facilities of 127,000 sq ft.



Façade of the Parker Pen Company's new plant in Janesville is white rock face brick. "Path of Nations" symbolizes free trade



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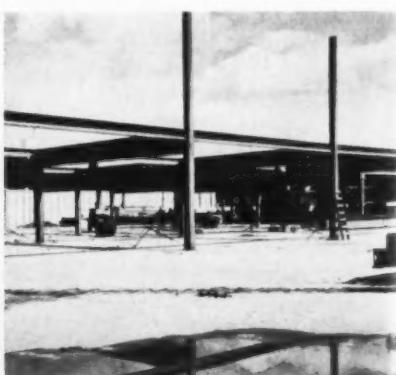


John J. Flad & Son of Madison, Wis., are the architects; Beling Engineering Consultants of Moline, Ill., mechanical engineers; and Robert B. Harris of Chicago, landscape architect.

Construction is steel and concrete, with exteriors of white rock face bricks. A 93-ft well at the rear of the plant provides 1500 gal. of water per minute for the plant's complete air conditioning system. An electrostatic precipitator continually removes air impurities, making inside air literally cleaner than outside. Lighting is fluorescent; double-pane windows are used to absorb outside heat, diffuse sunlight and prevent glare. Parking for 450 cars is provided; each employee will be given his own parking space.

The "Path of Nations" in front of the new plant has been built of native stones from more than 50 free nations of the world as a symbol of the company's philosophy of free multi-lateral world trade.

Construction photograph shows steel structure of new Parker plant—and reflection



(News continued on page 290)



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• **NEW PB-SERIES GAS BOILER** offers unbeatable efficiency, is a dual purpose unit designed always to give the best in automatic heating and satisfactory year 'round domestic hot water.

• **BOILERS and RADIATORS** — From the small bungalow to the large public building there's a Burnham Boiler or Radiator designed to provide top efficiency and utility.

The Burnham reputation for quality has been the stand-by of architects for 79 years. Write for complete information.

*Reg. U. S. Pat. Off.

Marley Double-Flow Aquatower... an Architect's Cooling Tower



Architects are enthusiastic about the Double-Flow Aquatower, the new Marley tower that can be incorporated inconspicuously into the design of clean-lined modern buildings.

Height of "the tower with the low silhouette" is such that building parapets often conceal it completely, and it can be masked on two sides to harmonize with any building design.

Engineers have also been quick to approve this tower that combines the outstanding features of Marley's large Double-Flow and Marley's smaller Aquatower, both accepted leaders in their fields. It is available in 8 standard sizes in all-steel or wood with asbestos cement board. Typical of its many applications are those that call for 50 tons or more of refrigeration.

Bulletin DFAQ will give you all the details on this new concept in water cooling. Write for your copy today.

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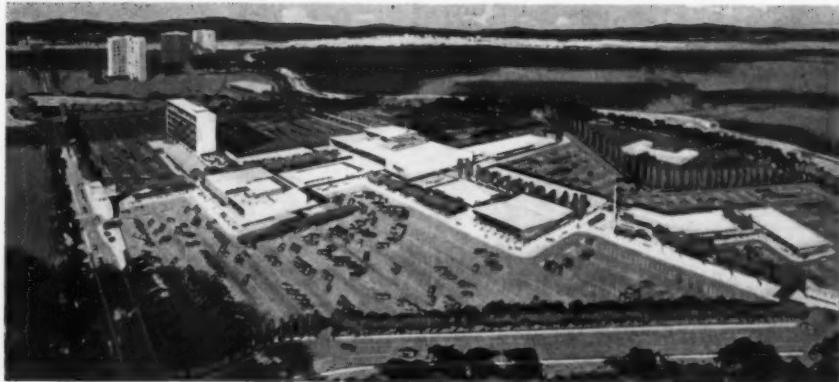
THE RECORD REPORTS

(Continued from page 288)

\$40 MILLION CENTER FOR PHILADELPHIA PLANNED

90-Acre Site Includes Hotel, Offices and Apartments as Well as Shopping Center

River Park Regional Shopping Center, designed by Welton Becket and Associates, will be built on a 90-acre site at the intersection of the Schuylkill Expressway and city line of Philadelphia



Philadelphia's River Park Shopping Center, on 90-acre site, will include hotel, offices and apartments, parking for 1500 cars

10 in the ENTRANCES to First Church of Christ Scientist New Haven, Conn.


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TRAFFIC through QUICKLY

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at a cost of approximately \$40 million. Construction is expected to start next spring.

Already completed on the site is a 770-unit, 12-story, three-building apartment development, known as the Presidential. Still to be built are the shopping center, a 12-story hotel, "The Presidential," and a 12-story office building.

The project will provide more than 1,000,000 sq ft of commercial and professional building space and a 15-acre parking area. More than 70 shops and stores will be included in the project — a major department store, a junior department store, specialty shops, a medical center, markets and drug stores among them. There will be parking facilities for 6000 automobiles and truck service tunnels for subsurface deliveries.

Mr. Becket has said the design of the center can be summed up in the single word "integration," which he says incorporates "not alone the plan and design of a shopping center but also the association of types of merchandise to be sold by the merchants of the shopping center. . . . 'Anchor' stores, attracting shoppers the full length and width of a shopping center, tend to eliminate the density of the foot traffic, allowing for greater freedom in the selection and purchasing of merchandise."

The River Park Center has been planned on the theory that a shopping center can be too big and therefore does not attempt to encompass the maximum retail potential of the area as shown in the preliminary surveys.

The center is planned on two levels, will be built of reinforced concrete and glass. Pennsylvania fieldstone and other native materials will be extensively used.

(News continued on page 292)



Woodbridge, N. J.: The new Howard Johnston leased restaurants on the New Jersey Turnpike make excellent use of several different Formica Picwoods for both horizontal and vertical surfaces.

Feilheimer and Wagner, Architects
Empire State Chair Co., Formica Booth Tables
American Woodcraft Corp., Other Formica Fixtures
4632 Spring Grove Ave., Cincinnati, Ohio

Valuable Floor Space...SAVED!



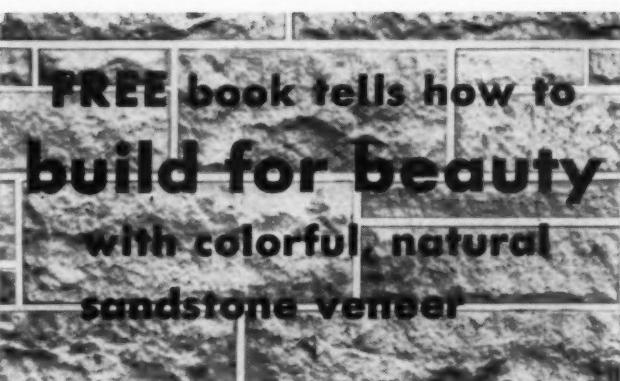
...and that's how it all started. The Loblaw Groceria of Hamilton, Ontario, installed a USAIRco Refrigerated Kooler-air 30 H.P. The RK is located in the store's back room to conserve important selling space. Fresh air intakes are hooked up to one central

penthouse atop the existing building. 6900 square feet of selling area are cooled in summer, comfortably ventilated in winter.

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THE RECORD REPORTS

(Continued from page 290)

PERIODICAL REPORT

Die Neue Stadt

September 1952

Frank Lloyd Wright again. In this issue of the German periodical, his work is discussed in an article by Heinrich Henning. Occasioned by the recent publication of a new book on Wright by Werner M. Moser, Zurich architect, the article is illustrated with photographs, drawings and plans of recent works, including the Johnson Wax buildings and tower, the chapel at Florida Southern College and the Guggenheim Museum among others. A reprint of a 1936 article by Wright on the apprenticeship of architects is included.



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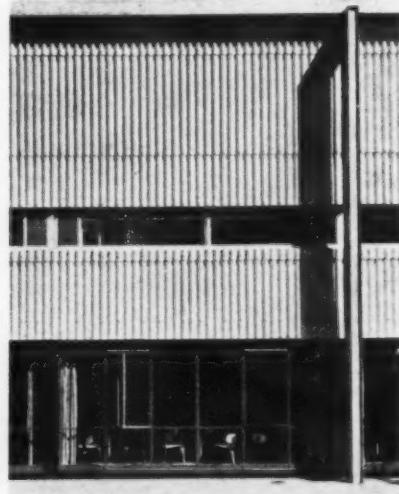
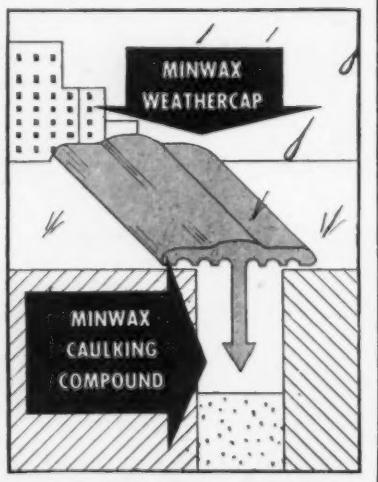
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Building above is by Egon Eiermann, whose work is discussed in the September issue of Die Neue Stadt

In the same issue of the magazine is an article, also by Heinrich Henning, on the post-war work of Egon Eiermann. One of the projects in which Eiermann has been involved is a large building for Radio Stuttgart, and both preliminary stages and the final plan for the structure are illustrated at length. In the article itself, still other buildings by Eiermann are shown.

(Continued on page 294)

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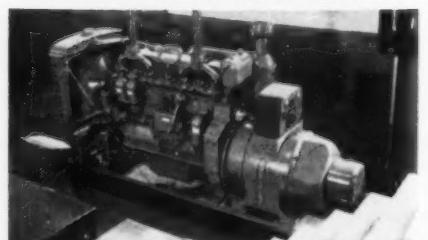
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1952

PAGE TEN

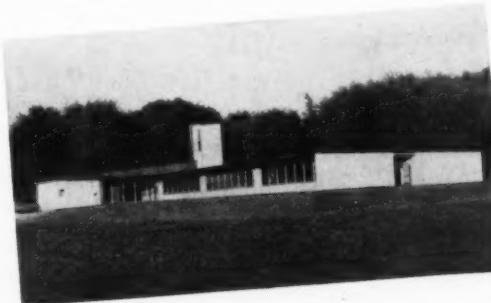
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THE RECORD REPORTS

(Continued from page 294)

Arkitehti-Arkitekten

No. 6-7, 1952

Featured in this issue of the Finnish magazine are the various stadiums and facilities in which the recent Olympic Games were held at Helsinki. These structures were all originally designed



Above: the Olympic Stadium in Helsinki, where the Olympic Games of 1952 were held. Architects: Yrjö Lindegren, Tovio Jäntti

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and at least partially built for the Olympic Games which were to have been held in 1940, but which were postponed because of the outbreak of the Second World War.

Shown in photographs, plans and elevations are the following buildings: the Olympic Stadium, architects Yrjö Lindegren and Tovio Jäntti; Swimming Stadium, architect Jorma Järvi; Riding Hall, architect Martti Välikangas; Rowing Stadium, architect Prof. Hilding Ekelund; and the Velodrome, also done by Ekelund.

L'Architecture d'Aujourd'hui

No. 42-43, August 1952

A handsome, comprehensive and varied monograph on Brazilian architecture of the past decade occupies the entire issue. Articles on the significance of Brazil's contribution to the development of modern architecture are contributed by Siegfried Giedion, André Bloc and Lucio Costa. Mr. Giedion also furnishes a study of the work of the Brazilian landscape architect, Burle Marx. Other articles include a description of the country and its occupants by José Lins do Rego and short statements on the work of the last ten years by Milton Roberto, president of the Brazilian Institute of Architects, and Vinicius de Moraes.

The bulk of the issue, however, comprises a pictorial account of what Brazilian architects have been doing over the past decade and what they plan to do in the immediate future. This is fully documented with photographs (many of them in fine color), plans, elevations and drawings.

(Continued on page 298)



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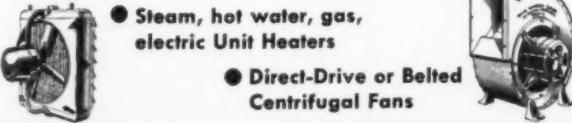


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THE RECORD REPORTS

(Continued from page 296)

Town and Country Planning

November 1952

Russia's biggest internal social problem today is probably housing. So reports Desmond Donnelly, associate editor of this monthly English review, in the first of a series of articles on housing



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Buildings shown here are typical of new apartment houses in Russia. Above: building under construction, 1951. Below: this structure shown in 1950 photo was awarded a Stalin Prize for excellence

Sovfoto



in Communist countries. The Russians are meeting this problem in Moscow and over the entire country by a gigantic building program. Speaking of this, Mr. Desmond remarks, "I have never in my life seen such a fiendish building boom."

"All over Moscow," he says, "new building is taking place—at a seemingly incredible rate. Most of it is either new office blocks or 7-10 story flats. This building drive is desperately needed, for today great areas of shacks and slums still remain. . . . Moscow is building flats at the rate of approximately 35,000 per year. Most are of a standard two- or three-room type and although probably dreamland to those who come from shackland, they are far inferior to British housing."

Mr. Desmond reports that it is estimated that it will take 20 years to solve Moscow's housing problem. By that time it is expected that the city's area will be doubled.

(Continued on page 300)

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THE RECORD REPORTS

(Continued from page 298)

The quality of this work is something else again, as the photographs of new apartment houses which accompany the article demonstrate. Mr. Desmond describes the architecture as heavy and ornate, like classical Victorian. "The plush furniture and curtains and ornate glass-ware all reek of Victorianism or an antique shop in Kensington. But the Russian takes a childlike pride in it all."

Architectural Design

October 1952

The bulk of this issue is devoted to work now on the boards of English architects, but perhaps of more immediate interest to their American counterparts is an editorial dealing with the problem of architect-builder relationships. Discussing Walter Gropius' analysis of the situation in the United States and his proposals for a closer connection between the architect and the building industry, including the possible estab-

lishment of a combined building-design-and-erection service, the magazine comments:

"The organization of the architectural profession in Great Britain is too solidly established to allow any great measure of modification in its structure; and the Registration Council and great professional bodies would be unitedly in opposition to any builder-architect combination such as Gropius suggests. His suggestions, however, need careful study before they are either accepted or rejected. At first sight they seem to place far too much reliance on the building industry which is, in this country at least, more reactionary and less inclined to consider progressive architecture and building development than even the architectural profession as a whole. The building industry in general sees little importance in the suggested trend toward greater industrialization in building, and obviously, with the usual well-known exceptions, considers the new building methods, usually initiated by architects, as temporary expedients, or even new-fangled nonsense only to be tolerated until the palmy days of Portland stone civic buildings and Gothic cathedrals return."

Admitting that a solution to the problem is difficult, the magazine nevertheless suggests ways in which it can be alleviated. Some of these have a familiar sound. A major proposed step, for example, is the inception of a major public relations program which would make full use of radio and television, films, exhibitions and descriptive literature to emphasize the importance of engaging architects for all kinds of building projects. Other proposals include development of a greater interest and awareness on the part of architects toward scientific and technical developments related to building and a greater participation in national and local public life.

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AMERICANS ABROAD

• The *Architectural Review* devotes seven pages of its October issue to an office building in Los Angeles by Richard Neutra.

• Two American architects are represented in the September issue of *Domus*. Six pages are given over to the presentation of an apartment house in Los Angeles by Raphael Soriano, and four pages are devoted to Philip Johnson's own house in New Canaan, Conn.

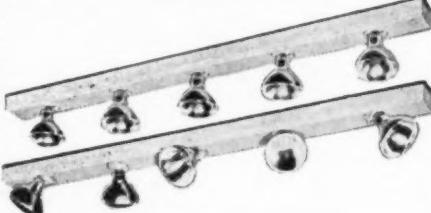
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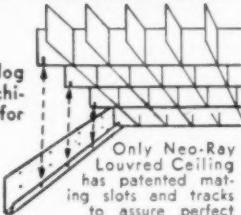
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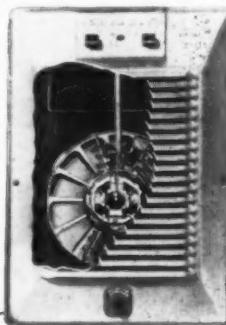


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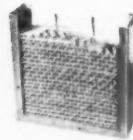
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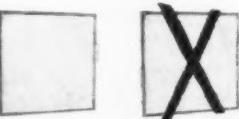
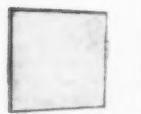
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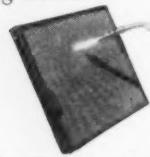
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REQUIRED READING

(Continued from page 48)

is engendered whenever this subject is brought up. The authors appear to look with favor on this building type, and set forth sound argument in its favor.

Surveys and site selection are discussed at considerable length and with completely documented studies. An appendix on trends in space provisions gives some interesting comparisons for various elements in school buildings over a span of years.

Like most books which attempt to cover a complete building type, some features of seemingly major importance are treated rather too lightly; for instance, this reviewer would like to have seen considerably more space devoted to a discussion of pupil clothing storage. Most school men and architects agree that this is one of the knottiest problems in the school building field and one which has not yet been satisfactorily solved. Another subject which is not fully developed is the function of the corridor in the modern school. With all of the consideration presently being given to possible multiple use of this circulation space, it is regretted that the authors did not explore this trend and attempt some evaluation of it.

One small point in regard to the photographs which were used to illustrate the various activities to be found in the classroom, was the fact that while they probably serve very well to make a point, some of the classroom surroundings are not too handsome and in many cases the rooms are obviously not modern in any respect. While this is of no particular importance as far as the value of the text is concerned it did bother this reviewer, who could not help wondering what foreigners might think of our school buildings, if the photographs alone were the basis of judgment.

These few minor criticisms do not seriously impair the value of the book as a whole. We feel that the authors have made a significant contribution in the field of schoolhouse literature by gathering together all of this vital material under one cover. The architect's task will have been made easier, by virtue of the increased awareness that this book will bring to the educational field of the problems which are present in elementary school planning, and the end result should be better school buildings.

(Continued on page 312)



...for suburban homes beyond the water mains



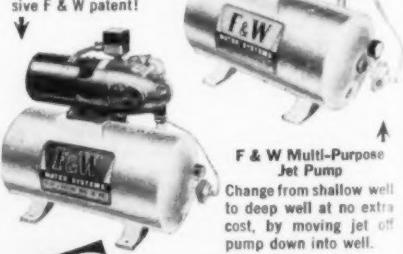
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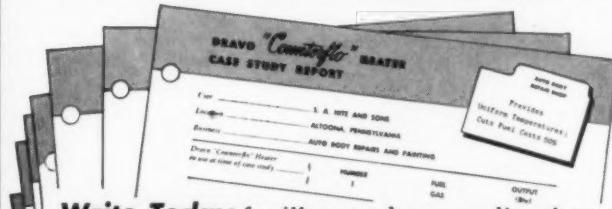


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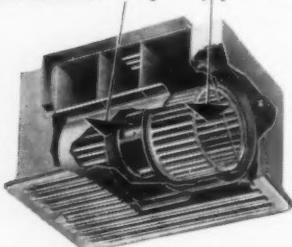
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REQUIRED READING

(Continued from page 304)

INTERIOR DECORATION

The Book of Furniture and Decoration—Period and Modern. By Joseph Aronson. Crown Publishers, Inc. (419 Fourth Ave. New York 16, N. Y.) 1952, 8½ by 11 in. 242 pp., illus. \$4.00.

Unfortunately, all of us are not possessed of a background knowledge of furniture styles and their proper uses, nor can we all say with confidence, "This goes with that." It is to those who lack such information that this book has been directed.

Taking the reader from primitive times to the present day, the author has compiled an incredible amount of information for the layman and the student, as well as the professional. This third revised edition includes the history of furniture design, the characteristics of the various period styles and the reasons behind their changes. The three categories into which the book has been divided are (1) The Development of Decoration, (2) The Elements of Decoration and (3) The Principles of Decoration. Each section has been generously treated with line drawings of period furniture, architectural details and decorative effects, and more than 200 photographs of interiors are included. Post-war contemporary design, new lighting techniques and other new developments in functional living are all discussed in easy-to-read and interesting text. The book should contribute a great deal of practical information to all readers — be they apartment dwellers, potential home owners or those professionals directly concerned with interior design. J.W.

A.P.A.-A.I.A. COLLABORATION

Design for Therapy. Report of the Conference held in Washington, D. C. Apr. 6, 7, 1952, under the auspices of The American Psychiatric Association. 1952, 7½ by 9¾ in. 80 pp.

As the result of a conference of psychiatrists, architects and others interested in mental hospital design, construction and equipment, the American Psychiatric Association in cooperation with the American Institute of Architects has proposed "to provide in documentary form, with plans, blue prints, drawings, photographs, and explanatory material, the best available body of data and theory on mental hospital design, construction, and equipment, and to place this data in the hands of those public and private officials and agencies who

(Continued on page 316)

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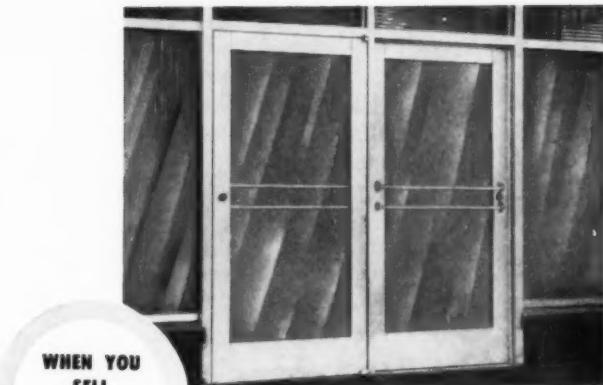
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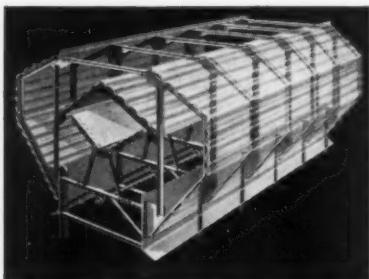
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REQUIRED READING

(Continued from page 312)

are responsible for planning and operating the mental hospitals and related institutions of the United States and Canada."

"Design for Therapy," the proceedings of this conference, not only offers the proposed budget for the two-year initial period of investigation and a projected budget for permanent operation, but gives the highlights of the discussions of the collaborating psychiatrists, architects and engineers as the testimony responsible for this highly significant proposal.

With 750,000 mental patients in this country hospitalized in buildings of which at least 50 per cent are obsolete, psychiatry is today greatly dependent on the profession of architecture, and as the development of mental institutions keeps pace with the strides of psychiatry, architects are finding theirs a therapeutic and emotional—as well as utilitarian—job. Patients, hospitalized because of illness resulting from abnormal environment, are too often treated in bleak, forbidding and dismally abnormal environments. This is the problem confronting both professions. "Design for Therapy" is a hopeful record that collaboration between architecture and psychiatry already has pointed the way toward hospital design for optimum psychiatric treatment.

BOOKS RECEIVED

Acoustics In Modern Building Practice. By Fritz Ingerslev. The Architectural Press (London, England) British Book Centre (New York, N.Y.) 1952. 290 pp., illus. This is a reference book for architects and students of architecture. The theory of acoustics is presented in the book much as it is in similar books in this country. The points of interest for American architects, however, are the illustrations of Danish materials as applied for acoustic treatment.

Designs to Music. By Margit Varro. Apprentice House (Chicago, Ill.) 1952. 60 pp., illus. This is a discussion of music and the association of ideas, as developed through an examination of the response of musicians to art and of artists to music, resulting from classroom experiments in which students of architecture, design, photography, etc., express in visual medium certain basic auditory patterns.



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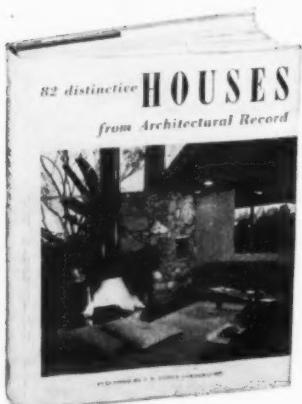
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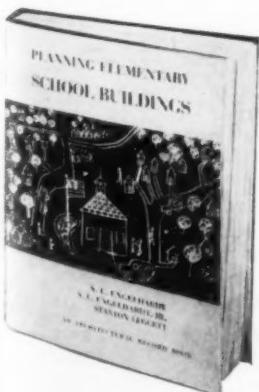
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by N. L. Engelhardt, Sr., N. L. Engelhardt, Jr., and Stanton Leggett

WRITTEN by three widely-known school planning consultants, this book (due in January) is an authoritative and up-to-date guide for architects, school officials, school board members, and others responsible for building or remodelling schools.

PLANNING ELEMENTARY SCHOOL BUILDINGS is an exhaustive study of all phases of an intricate subject. The author tells how to survey the specific needs of a community, then takes up financing plans, cost estimating, site selection, basic design, choice of materials, classroom layout and equipment, the auditorium, the school library, the cafeteria, outdoor and indoor play areas, offices, and other major requirements. He also analyzes improved methods of heating, ventilating, and lighting the school, and discusses communications equipment, safety measures, sanitary facilities, and the like.

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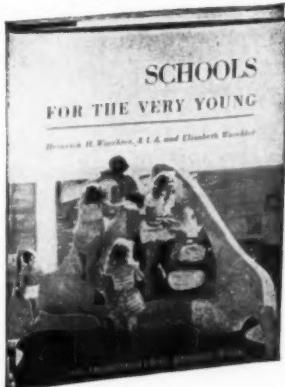


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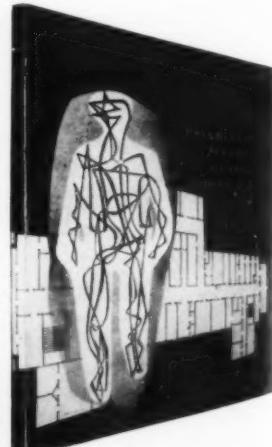
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by Paul Haun, M.D.

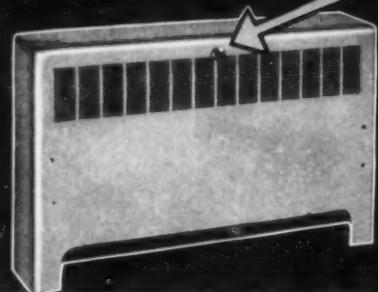
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"Now I can handle the whole floor"



"No more useless trips — no more time lost walking the corridors. When a patient needs attention he gets it — quickly. Since we've had the AUTH "Vokalcall" System I can accomplish twice as much — and the feeling of security it provides gives a great lift to the patients' morale. It's simple to operate, and so sensitive that I can hear my patients even when they whisper. I can satisfy most of their needs without leaving my station."

If you would like more information about the AUTH "Vokalcall" System of Audio-visual communication between patients and nurse, write the Auth Electric Company, Inc., 34-20 Forty-Fifth Street, Long Island City 1, New York.

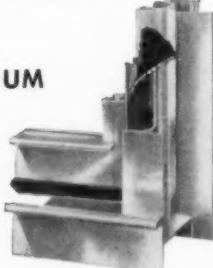


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MANAGEMENT likes their cost-cutting economy—their time-saving efficiency.

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WRITE Dept. HN12 Boston, for complete data.

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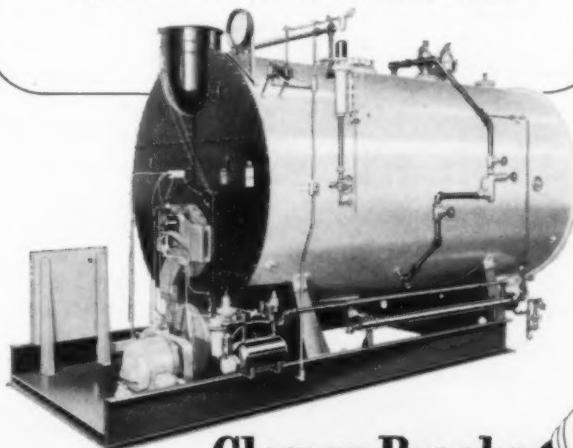
**Space saving design... WHEN
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Write today for complete information on Cleaver-Brooks Self-Contained Boilers — oil, gas, combination oil and gas fired — 15 to 500 hp., 15 to 250 psi. One source, one responsibility for the complete boiler.

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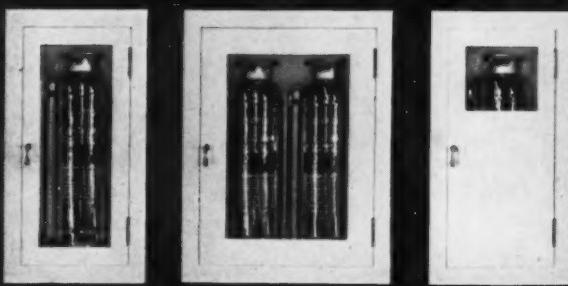
Write RB&W for further information. Plants at: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Sales offices at: Philadelphia, Pittsburgh, Detroit, Chicago, Dallas, San Francisco. Sales agents: Portland, Seattle.

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lends itself equally well to modern structures like the Portland Cement Association's research laboratories or to classic or Gothic. Architectural concrete produces enduring and majestic edifices of any size, design or style when the simple and time-tested principles of quality concrete construction are followed.

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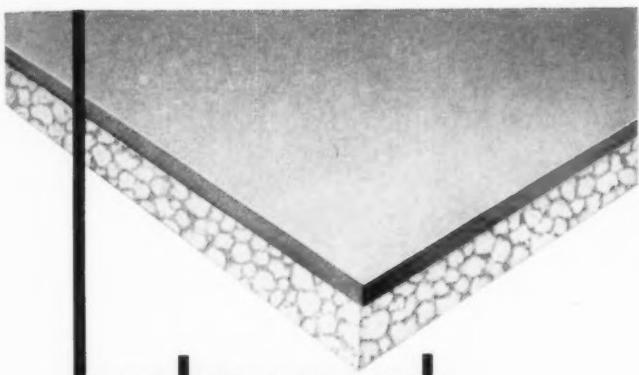


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Eliminate Costly Hand Loading

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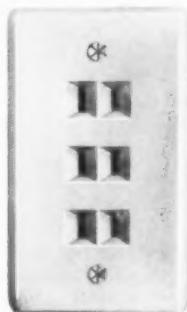
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SPECIFICATION DATA



SWITCH-CONTROLLED CONVENIENCE OUTLET

CLIP this specification data sheet for simplified write-ins.



Triple outlet with plate, common feed, common ground, in ivory plastic (RO-1).

Triple outlet with plate, separate feed, common ground, in ivory plastic (RO-2) permits wiring of unit to provide one or two switch-controlled outlets while remaining outlet or outlets are permanently live.

For information on other G-E wiring devices, write Section D8-125 Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

GENERAL ELECTRIC

THIS... practical booklet is based on extensive experience in working with architects and heating engineers. Illustrated with on-the-job photos and helpful diagrams—replete with suggestions that will save you time, trouble and cost. Send coupon now.



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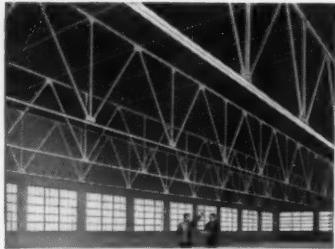
Please send me booklet on radiant heat pipe layout.

Name..... Title.....

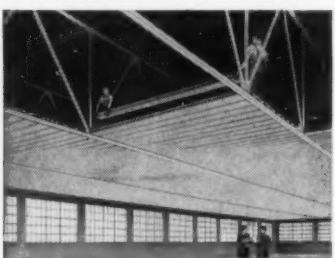
Firm.....

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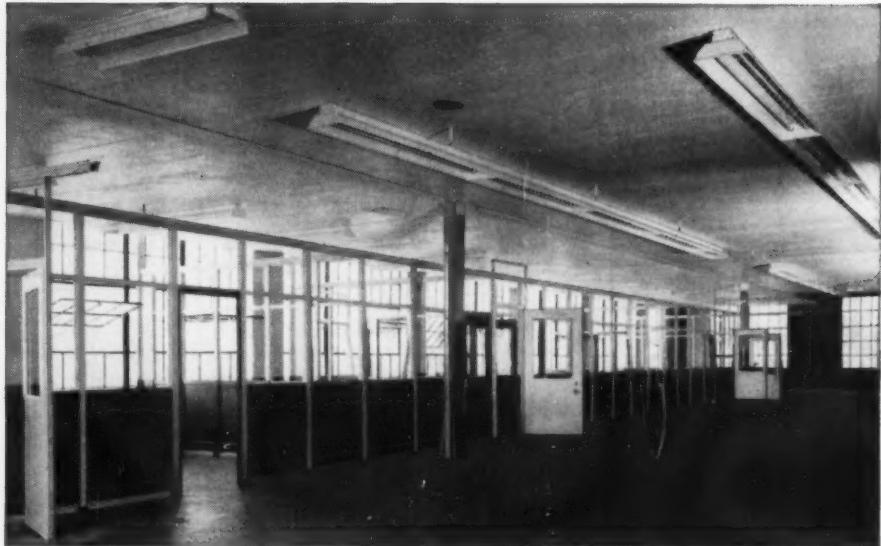
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To this old factory . . .



they simply did this . . .



to get this . . .

Fenestra acoustical-structural panel ceiling changes old factory into modern office . . . OVERNIGHT!

Out of a sow's ear . . . !

A big Michigan concern needed office space in a hurry and the only available building was an old one-story factory.

Steel beams (the bottom chords of the roof trusses) ran clear across the building . . . every 20 feet.

So they simply laid 20-foot Fenestra* Acoustical-Structural Steel Panels side by side, from one beam to the next. Quickly, inexpensively, the long, strong panels interlocked into a flat, handsome acoustical ceiling . . . and acted as a load-carrying storage floor for ducts, air conditioning, electrical services and such.

While they were doing all this, the company employees went right on working below. Using

the first few panels laid as a storage and working platform the installation crew stayed up above. And, of course, there was neither dirt nor dust to shower down below.

They can clean their Fenestra acoustical ceiling with soap and water, or paint it without hurting its acoustical efficiency. And, of course this acoustical ceiling is noncombustible.

Cost?

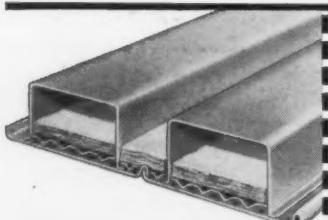
Less than \$1.25 per square foot . . . installed!

If you would like to know more, write to the Detroit Steel Products Company, Department AR-12, 2252 East Grand Boulevard, Detroit 11, Michigan. Also ask about the other money-savers you see illustrated below.

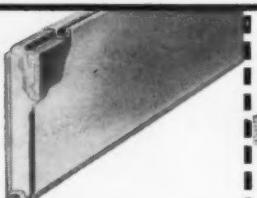
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Fenestra METAL BUILDING PANELS

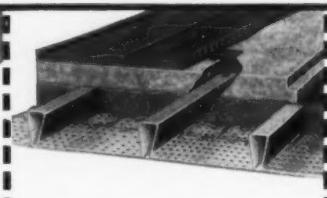
... engineered to cut the waste out of building



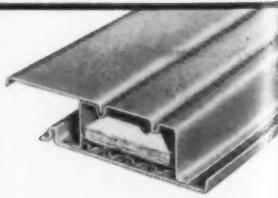
Acoustical "D" Panels
for roofs, floors, ceilings.
Width 16". Depth 1½" to 7½".



"C" Insulated Wall Panels.
Width 16". Depth is 3".
Steel or aluminum.



Acoustical Holorib
for acoustical-structural roof.
Width 18". Depth 1½".



Acoustical "AD" Panels
for ceiling-silencer-roof.
Width 16". Depth up to 7½".

(See page 6 for Index to Advertising)

J-C

another **SOLVES 1 TOUGH HEATING PROBLEM**

PROBLEM

Foundry ventilating system uses fans to move air. Absenteeism high due to draughty working conditions. Unpleasant fumes and gases being circulated in working areas.

SOLUTION

J-C engineers called in to redesign foundry heating and ventilating system. Recommended installation of TWO J-C OIL-FIRED SUSPENSION UNITS. Each unit tempers 5,000 CFM of air. Eliminates drafts. Absenteeism sharply cut. Fumes and gases no longer circulated in working areas. Installation highly satisfactory!!



Another example of J-C's ability to solve the tough heating problems faced by heavy industry.

In the installation pictured at the foundry of the Saginaw Bearing Company, Saginaw, Michigan, Jackson & Church engineers were called upon to design a heating and ventilating system providing comfortably heated fresh air to all parts of the working area, at the same time ridding these areas of the fumes and gases present in the melting process.

The problem was solved with the two J-C Suspension units shown. In addition to heating the main foundry melting room, one unit heats an adjacent shipping area. The system has been so designed that during the night uniform temperature is maintained with only one suspension unit in operation through reducing the fresh air from outside.

No matter what your heating or ventilating problem may be, Jackson & Church engineers are at your service to assist with the right solution. There's a Jackson & Church unit to meet most industrial, commercial and residential heating requirements.



... America's Largest and Most Complete Warm Air Heating Line ...

J-C

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Pittsburgh's "Golden Triangle," formed by the junction of the Allegheny and Monongahela rivers, was so named when fabulous coal and steel fortunes were made there. Through the years the area at "The Point" became a commercial slum, but today it is a preview of the Pittsburgh of tomorrow.



FROM SQUALOR TO SPLENDOR

GATEWAY CENTER, being erected by the *Equitable Life Assurance Society* in Pittsburgh's Golden Triangle, is the largest single project in the transformation of an area of ugliness into one of great beauty and increased business housing. Three stainless-steel-clad office towers on 23 landscaped acres facing the new Point Park are the first of eight to be erected. Occupants of these three modern struc-

tures are served by the largest air conditioning system in the world. More than 6,000 room units provide cooling equal to that produced by melting 9 million pounds of ice daily. This system is typical of the many efficiencies. To have had its Flush Valves chosen for installation throughout all these buildings is a source of pride to SLOAN, and another preference that explains why ...

more SLOAN Flush VALVES

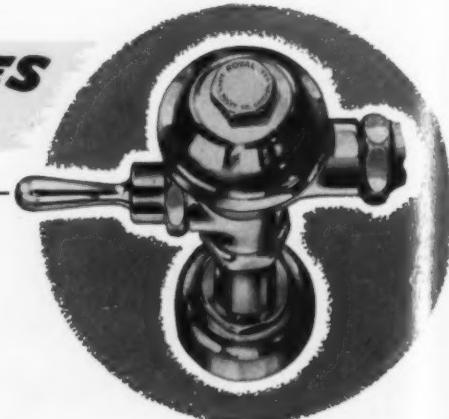
are sold than all other makes combined



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Another achievement in efficiency, endurance and economy is the SLOAN Act-O-Matic SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. When turned on it delivers cone-within-cone spray of maximum efficiency. When turned off it drains instantly. It gives greatest bathing satisfaction, and saves water, fuel and maintenance service costs.

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